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Tongass
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Indian River Timber Sale(s)

Final Environmental Impact Statement

Volume I

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Common Abbreviations

ACMP	Alaska Coastal Management Program
ADEC	Alaska Department of Environmental Conservation
ADF&G	Alaska Department of Fish and Game
ANCSA	Alaska Native Claims Settlement Act of 1971
ANILCA	Alaska National Interest Lands Conservation Act of 1980
BMP	Best Management Practice
CFL	Commercial Forest Land
CFR	Code of Federal Regulations
COE	Army Corps of Engineers
CZMA	Coastal Zone Management Act of 1976
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
FSH	Forest Service Handbook
GIS	Geographic Information System
IDT	Interdisciplinary Team
LTF	Log Transfer Facility
LUD	Land Use Designation
LWD	Large Woody Debris
MBF	One thousand board feet
MIS	Management Indicator Species
MMBF	One million board feet
NEPA	National Environmental Policy Act of 1969 (as amended)
NFMA	National Forest Management Act
OGR	Old Growth Reserves
PFL	Productive Forest Land
ROD	Record of Decision
TLRMP	Tongass Land and Resource Management Plan
TTRA	Tongass Timber Reform Act
USDA	United States Department of Agriculture
VCU	Value Comparison Unit
WAA	Wildlife Analysis Area

Indian River Timber Sale(s)

Final Environmental Impact Statement

USDA Forest Service, Alaska Region

Tongass National Forest

Sitka and Hoonah Ranger Districts

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Abstract

The U.S. Forest Service proposes to harvest approximately 24 million board feet (MMBF) of timber in the Indian River Project Area, Sitka and Hoonah Ranger Districts, Tongass National Forest. The actions analyzed in this EIS are designed to implement direction contained in the 1997 Tongass Land and Resource Management Plan. The EIS describes six alternatives which provide different combinations of resource outputs and spatial locations of harvest units. The alternatives include: (A) No Action; (B) (Proposed Action) to distribute timber harvest throughout the Project Area, using a landscape matrix approach to maintain levels of biodiversity and wildlife habitat; (C) to concentrate timber harvest in Value Comparison Units (VCU) 204, 216, and 222 with additional units in VCU 220 to provide a middle volume alternative; (D) to concentrate timber harvest in VCUs 204, 216, and 222 to reduce impacts on residents of Tenakee Springs; (E) to distribute timber harvest throughout the Project Area, while deferring harvest in areas of high habitat value; and (F) to distribute timber harvest throughout the Project Area and provide a high level of timber.

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List of Preparers

List of Agencies, Organizations, and Persons to Whom Copies of this EIS Were Sent

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Chapter 1

Purpose and Need

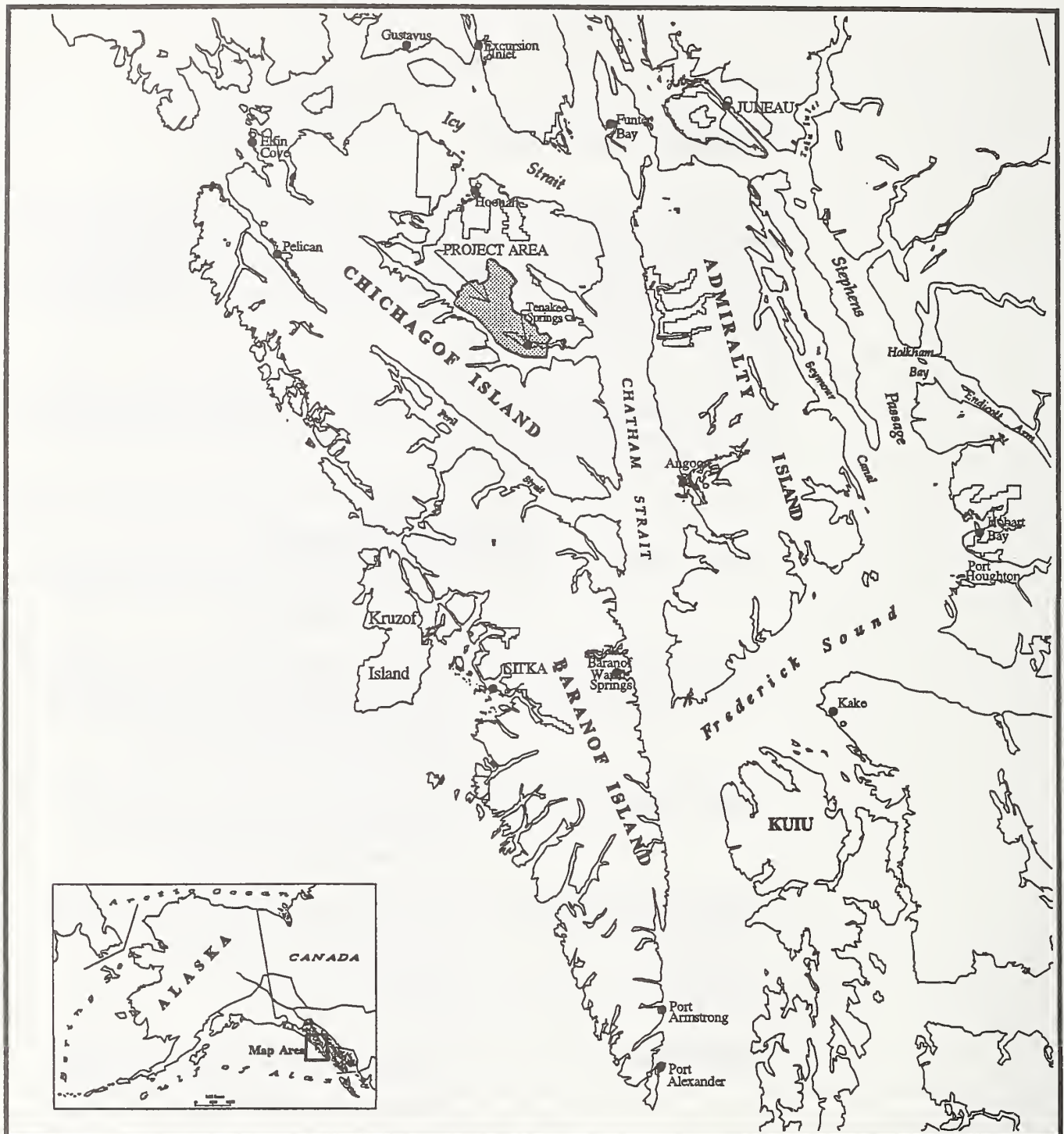
Project Overview

In compliance with Federal regulations, the Forest Service has prepared this Environmental Impact Statement (EIS) for proposed timber harvest and related activities in the Indian River Project Area (see Figure 1-1 for Project Area location). This EIS follows the format established in the Council on Environmental Quality (CEQ) regulations (40 CFR 1500-1508), and discloses the physical, biological, economic, and social consequences of five harvest alternatives, plus a no-action alternative.

The EIS is divided into four main chapters, as outlined and described in Table 1-1 below. Supporting materials are included in the Appendices, and in the project planning record on file at the Forest Supervisor's Office in Sitka. A summary of the EIS and the Record of Decision (ROD) are in a separate document.

Table 1-1 How This EIS is Organized	
Chapter 1: Purpose and Need	The purpose and need for the project, decision to be made, background information, public issues, and other considerations.
Chapter 2: Alternatives, including the Proposed Action	The presentation and comparison of alternatives, with information on their environmental impacts and how they would be implemented, with measures to protect the environment.
Chapter 3: Affected Environment	A description of the existing condition of the environment that may be affected by the alternatives under consideration.
Chapter 4: Environmental Consequences	Environmental changes likely to occur with the implementation of the alternatives.
Appendices	Supporting information.
Alternative Maps	Maps for each alternative considered in detail, which illustrate proposed units and roads, and display other geographic features of the Project Area.

Figure 1-1 Vicinity Map



Project Area



Scale in Miles



Purpose and Need

The Indian River Timber Sale(s) Project is proposed at this time to respond to the goals and objectives identified for the Project Area by the modified 1997 Tongass Land and Resource Management Plan (also referred to as the modified 1997 Forest Plan, pp. 2-2 to 2-5), and to move the Project Area toward the desired condition described in the modified 1997 Forest Plan.

The modified 1997 Forest Plan identified a desired condition for lands on which timber harvest is allowed, which includes managing suitable timber lands for the production of sawtimber and other wood products and allowing a variety of successional stages that provide a range of wildlife habitat conditions (modified 1997 Forest Plan, pp. 3-135 to 3-136, and 3-144).

As stated above, the Indian River Timber Sale(s) Project responds to the modified 1997 Forest Plan goals and objectives, as well as the desired condition for the Project Area.

Timber Growth and Productivity

Losses to the timber resource caused by age decay and disease are considerable in old-growth forests. It is not uncommon for over 30 percent of the timber volume in old-growth stands to be defective and thus unusable for wood products. Tree vigor tends to decrease with maturity, causing an increase in susceptibility to disease and decay fungi. Disease and decay processes are a natural part of forest ecosystems, and play a key role in providing wildlife habitat in old-growth forests. Harvesting aging stands, including those in declining health, on lands that allow timber harvest and replacing them with faster growing, healthy stands will reduce the volume loss associated with decay and disease and increase the growth and yield of the managed forest land.

The modified 1997 Forest Plan allocates approximately 72.2 percent of the land within the Indian River Timber Sale(s) Project Area to the Timber Production Land Use Designation (LUD). The Forest Plan states that the desired condition for Timber Production lands is that they be managed for the production of sawtimber and other wood products on an even-flow, long-term sustained yield basis (modified 1997 Forest Plan, p. 3-144). An additional 0.1 percent of the land within the Indian River Timber Sale(s) Project Area is allocated to the Modified Landscape LUD. The desired condition for these lands is that they produce a yield of timber that contributes to the Forest-wide sustained yield (modified 1997 Forest Plan, p. 3-135).

The remaining 27.7 percent of the Project Area is allocated to the Old-growth Habitat LUD. The desired condition for these lands is that all forested areas in this LUD would have attained old-growth forest characteristics, providing a diversity of old-growth habitat types and associated species and subspecies and ecological processes. Timber volume from this LUD (such as salvage) does not contribute to the Forest-wide allowable sale quantity.

Currently, western hemlock makes up about 83 percent of the old-growth forests in the Project Area. Western hemlock is susceptible to dwarf mistletoe, a disease that does not infect Alaska yellow-cedar and rarely infects Sitka spruce. Western hemlock also appears to have more insect enemies than Sitka spruce. In addition, western hemlock has the lowest economic value of the three major commercial tree species in the Project Area. Harvesting existing stands dominated by western hemlock can encourage the growth of Sitka spruce and yellow-cedar, creating a more diverse species mix and minimizing losses due to insects and diseases that are species specific. Using clearcut harvest methods and cable yarding systems will more likely provide favorable conditions for spruce and cedar regeneration than harvest methods using helicopters for yarding.

Market Demand

Section 101 of the Tongass Timber Reform Act (TTRA) directs the Forest Service to “seek to provide a supply of timber from the Tongass National Forest which (1) meets the annual market demand for timber from such forest and (2) meets the market demand from such forest for each planning cycle,” to the extent consistent with the multiple use and sustained yield of all renewable forest resources. Market demand for Tongass National Forest timber is derived from factors including Southeast Alaska’s timber industry mill capacity; local, national, and international timber markets; and projected local, national, and worldwide timber supplies.

The Alaska Region uses the projections of Regional Economist Kathleen Morse to help determine demand for Tongass timber. In addition, the Pacific Northwest Research (PNW) Station was also consulted (Brooks and Haynes 1997). Market demand estimates for Tongass timber from year 1998 through year 2007 were based on three projections, or scenarios, of demand (low, medium, and high). Average annual demand over the 1998 to 2007 time frame was estimated to be 112.8 mmbf under the low scenario, 132.6 mmbf under the medium scenario, and 182.2 mmbf under the high scenario (USDA Forest Service 1999). The timber demand study also evaluated the range of expected timber purchases for FY 1999. According to the study, expected purchases in a low market scenario would range from 86 mmbf to 136 mmbf. In a medium market scenario, the range would be 99 mmbf to 188 mmbf. The high market scenario (which is unlikely to occur) range would be 128 mmbf to 256 mmbf (USDA Forest Service 1999).

The Forest Service intent is to provide the opportunity for the timber industry as a whole to acquire a supply of purchased, but unharvested timber equal to about three years of timber consumption, considering the average annual demand generated in the timber demand study. This supply is a means of providing for stability in relation to fluctuating market demand. It is estimated that a three-year supply of timber, based on medium demand projections, is 399 mmbf. As of April 30, 1999, there were 372 mmbf of unharvested timber volume under contract to the timber industry (Automated Timber Sales Accounting System Report 907-01, April 30, 1999). Thus, in order to meet the intent of having a three-year supply, approximately 27 mmbf of timber volume needs to be cleared through the NEPA process and offered to prospective bidders.

The Tongass National Forest also has a goal of offering approximately 153 mmbf annually to prospective bidders. Appendix A of this EIS displays a timber sale schedule that is capable of supplying these timber volumes. Timber volume from the Indian River Timber Sale(s) Project will contribute toward meeting this goal.

Appendix A provides a detailed rationale for why the Indian River Timber Sale(s) Project Area was selected for analysis at this time. In summary, the appendix states:

- the modified 1997 Forest Plan allocated over 72 percent of the area as a Timber Production Land Use Designation (LUD), with sufficient timber volume available to help meet market demand;
- timber management activities will contribute to meeting the goals, objectives, and desired conditions for this LUD;
- most of the other Timber Production LUDs on the Forest have or are planning to have timber management activities scheduled in them;
- timber harvest infrastructure (roads, log transfer site, rock quarries) is in place or in need of maintenance to reduce potential resource damage and to continue timber harvest offerings;
- this project is consistent and meets Forest Service policy in the Alaska Region, the Regional Guide, the modified 1997 Forest Plan, and all other laws and regulations governing the harvest of timber from National Forest System lands;

- this project would provide local employment opportunities in the wood products industry, consistent with providing for multiple use and sustained yield of all renewable forest resources

Local Employment Opportunities

Timber is one of several valuable resources on the Tongass National Forest, and many people depend on it for their livelihood. Timber from the Tongass is harvested for sawn wood products such as lumber and cants and wood chip exports, and is the basis for an industry in Southeast Alaska that provided about 1,749 direct jobs in Fiscal Year 1996 (Alaska Department of Labor, May 1997).

The Tongass timber program is part of a long-term cooperative effort among the Federal government, the State of Alaska, and local governments to provide greater economic diversity and stability in Southeast Alaska and more year-round employment. The Indian River Timber Sale(s) Project would contribute toward this effort, providing the opportunity for approximately 49 average annual jobs and \$2.1 million in associated average annual income. This equates to 8.24 jobs and \$350,000 in associated income per million board feet harvested (Forest Service IMPLAN model, base year 1992).

Decision to be Made and Responsible Official

The Council on Environmental Quality (CEQ) regulations for implementing the National Environmental Policy Act state that an EIS "...should present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decision-maker. . . ." This EIS, in accordance with CEQ regulations, is not a decision document in itself, but is written to provide sufficient information for the decision-maker.

The Assistant Forest Supervisor in Sitka, Alaska is the responsible official for this Project. He must decide whether or not to make timber available from the Indian River Project Area. Furthermore, if he selects an alternative that proposes timber harvest, he must decide:

- the volume of timber to make available in this area in two or more timber sales;
- the location of timber harvest units, road systems, and log transfer facilities (LTFs);
- mitigation measures and enhancement opportunities for sound resource management;
- whether there may be a significant restriction on subsistence uses.

Project Location

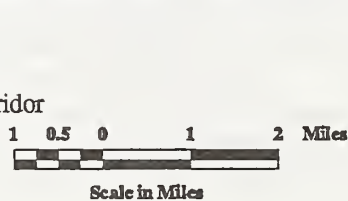
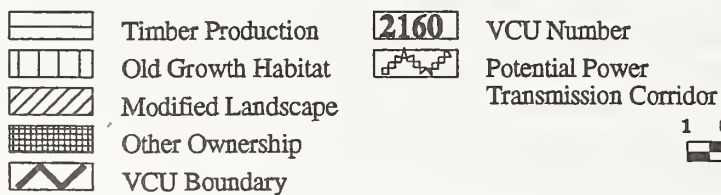
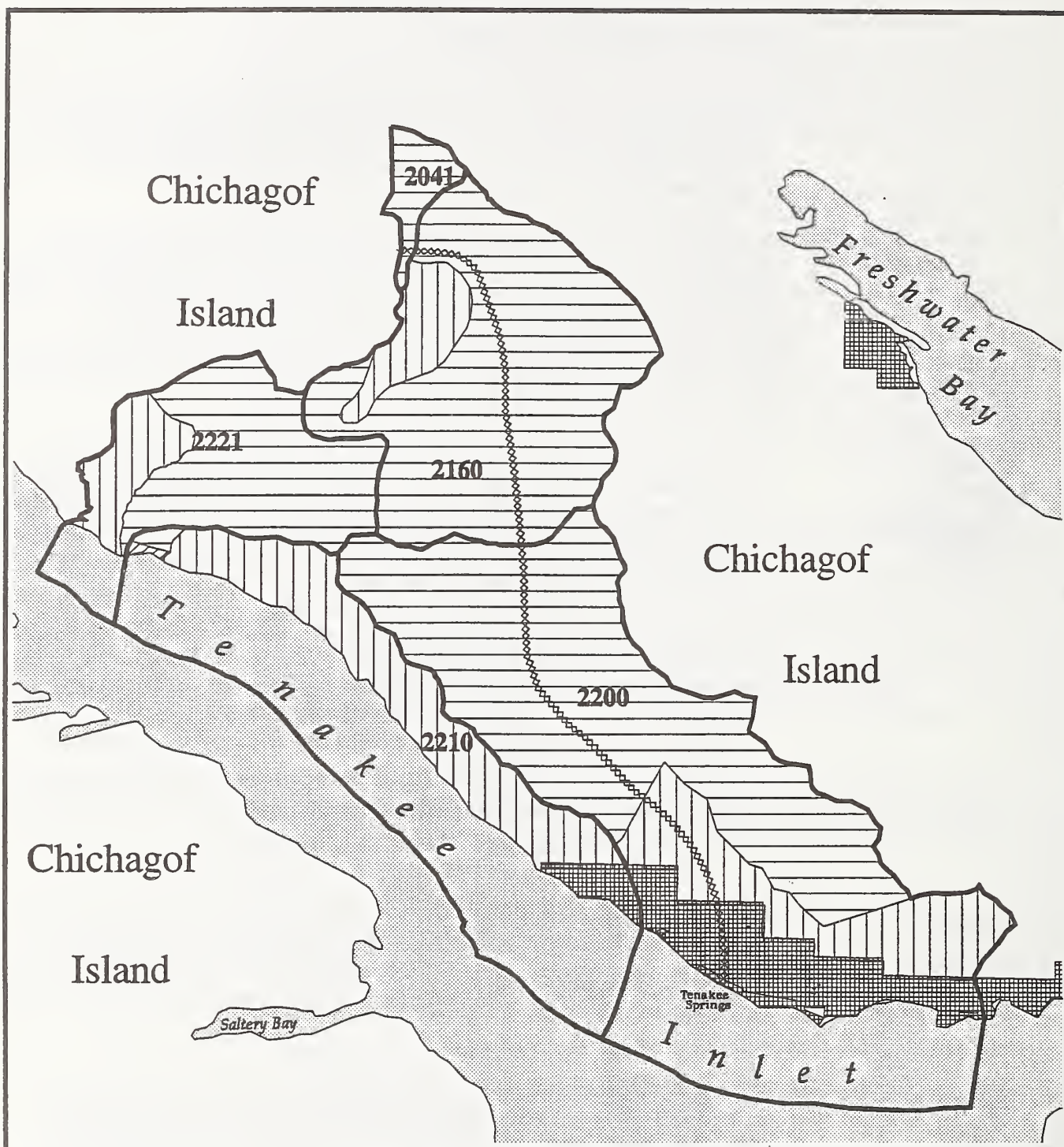
The Indian River Project Area is located in the Tongass National Forest, and is situated on the northern shore of Tenakee Inlet, on Chichagof Island (Figure 1-1). The Project Area includes the major watersheds of 10-Mile Creek, Indian River, and portions of the Freshwater Creek and Game Creek drainages. The City of Tenakee Springs lies within the Project Area.

Proposed Action

The proposed action would harvest up to approximately 24 million board feet (mmbf) of timber from 1,821 acres within the Indian River Project Area on northeast Chichagof Island. This timber would be made available through two or more independent sales. Independent timber sale scheduling and volume of timber put up for bid will depend on current demand and economic conditions. As many as eight miles of new road would be built to facilitate timber removal. One previously existing log transfer facility (LTF) at Sunshine Cove and one new site near 10-Mile Creek would be used to implement timber harvest.

1 Purpose and Need

Figure 1-2 Project Area LUDs and VCUs



Relationship of This Project to the Tongass Land and Resource Management Plan (TLRMP)

The National Forest Management Act of 1976 (NFMA) directs each National Forest to prepare a plan to guide the management of its lands. The original Tongass Land Management Plan was completed in 1979, and amended in 1986 and 1991. The current Forest Plan was approved in 1997 (USDA Forest Service 1997), modified in 1999, and now guides the management of the Tongass National Forest (USDA Forest Service 1999).

The Indian River EIS is a project-level analysis; its scope is confined to addressing the significant issues and possible environmental consequences of the project. It does not attempt to address decisions made at higher levels. It does, however, implement direction provided at those higher levels. Where appropriate, this EIS tiers to the 1997 TLMP EIS (USDA Forest Service 1997a) and also to the Alaska Regional Guide EIS (USDA Forest Service 1983), as encouraged by 40 CFR 1502.20. General discussions from these documents and the Indian River planning records are incorporated by reference rather than repeated in this EIS (40 CFR 1502.21). (See *References Cited* section following Chapter 4.)

The 1997 Forest Plan, as modified in 1999, added a new standard and guideline that increases timber harvest rotation from 100 years to 200 years in certain areas of the Tongass National Forest, including the Indian River Project Area. This was done to address projected deer habitat capability declines and fragmentation concerns. This new direction maintains more productive old-growth in areas of commercial timber harvest, and improves the likelihood that the Forest Plan connectivity objectives can be met.

Management Direction

The modified 1997 Forest Plan provides the primary direction for Forest management by means of the following integrated components:

- **Forest Multiple-Use Goals** - concise statements that guide the overall management of the Forest. These describe a desired future condition, expressed in broad, general terms, with no specific date by which the goals are to be achieved.
- **Forest Management Objectives** - narrative objectives for specific resources and the levels of goods and services (resource outputs) that are anticipated during the first decade of Forest Plan implementation.
- **Management prescriptions** - a description of land uses and activities that may occur on specific areas of land. The management prescriptions in the modified 1997 Forest Plan include 19 land use designations (LUDs), with a range of management objectives and specific standards and guidelines to ensure attainment of Forest management goals and objectives. (See Table 1-2.)
- **Forest-wide Standards and Guidelines** - the standards and guidelines that apply to all, or most, areas of the Forest. Each management prescription includes a list of those that apply to that land use designation.

(Note: Consult the modified 1997 Forest Plan for a complete discussion of management direction, goals and objectives, prescriptions, and standards and guidelines for the Tongass National Forest.)

1 Purpose and Need

Figure 1-3 Project Area VCUs

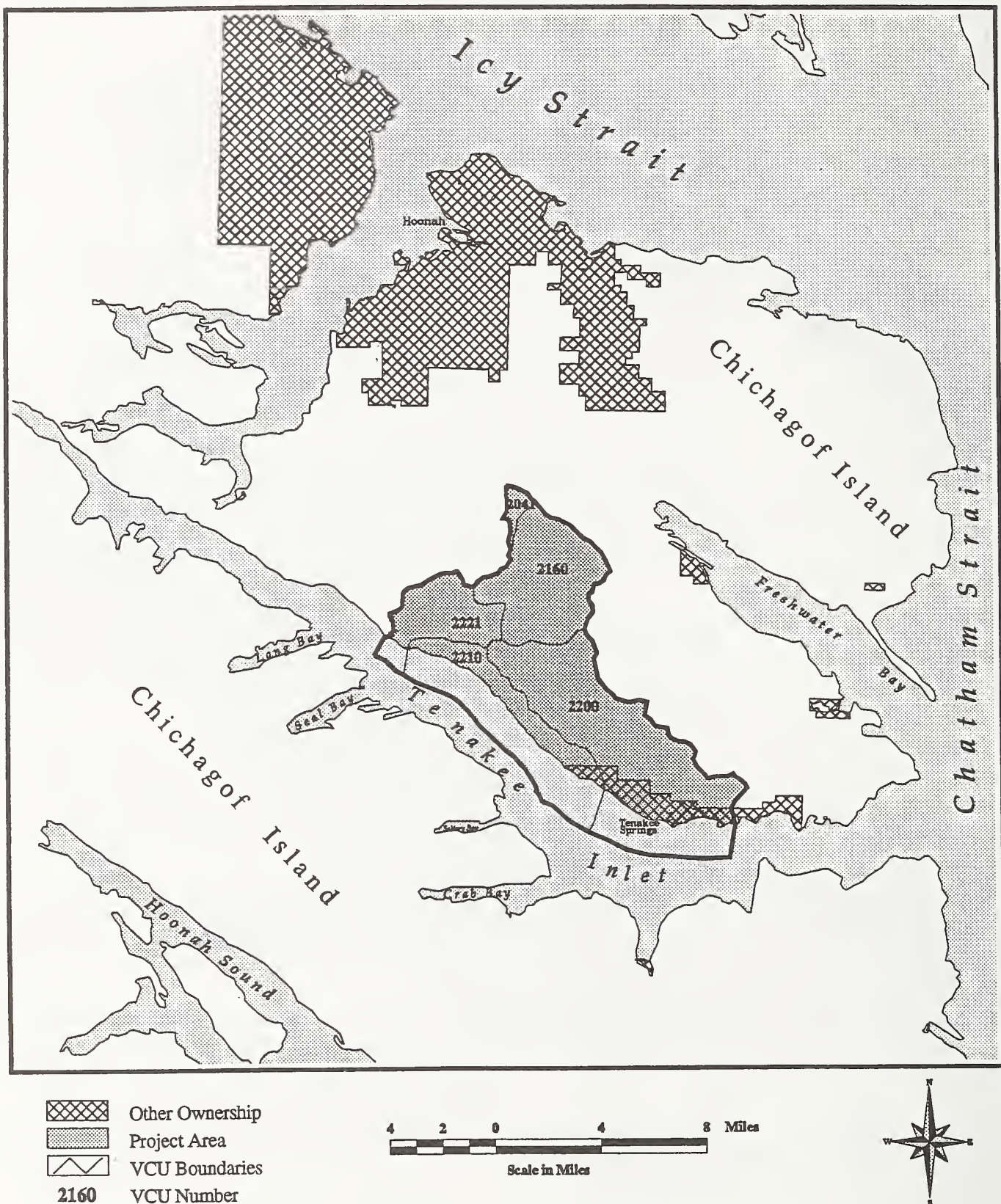


Table 1-2
Modified 1997 Forest Plan Land Use Designations

Non-Development LUDs		Development LUDs	
Wilderness and National Monument	Mostly Natural	Moderate Development	Intensive Development
Wilderness National Monument Wilderness National Monument	LUD II Old-growth Habitat Research Natural Area Remote Recreation Semi-Remote Recreation Municipal Watershed Special Interest Area Wild River Scenic River Recreational River Experimental Forests	Scenic Viewshed Modified Landscape	Timber Production Minerals Transportation & Utility Systems

Source: Tongass Land and Resource Management Plan Record of Decision (USDA Forest Service, April 1999)

Management Prescriptions for the Indian River Project Area

The 1979 TLMP divided the Forest into land areas called value comparison units, or VCUs. VCUs are roughly equivalent to large watersheds; their boundaries usually follow easily recognizable watershed divides. The Plan also established four land use designations (LUDs) to describe certain uses and activities that could be authorized in management of the Forest. Each VCU was allocated to one of these four LUDs. As stated earlier, the modified 1997 Forest Plan has now established 19 LUDs (see Table 1-2). As used in the modified 1997 Forest Plan, a LUD is a defined area of land to which specific land use prescriptions are applied. The area within a given VCU may be allocated to more than one LUD.

The Project Area encompasses all or portions of five TLMP VCUs (see Table 1-2a and Figure 1-3). For the Indian River Project, TLMP VCU 2040 was subdivided to display only the small portion of the VCU (2 percent) included within the Project Area boundary; the subdivision within the Project Area is numbered 2041. TLMP VCU 2220 was also subdivided to avoid conflicts with the Eight Fathom Timber Sale project in the western half of the VCU; the Project Area subdivision is numbered 2221, and referred to as 10-Mile Creek. Please note that these subdivision numbers are for this project only.

The modified 1997 Forest Plan allocates land within the Indian River Project Area VCUs to four land use designations: TM (Timber Production), OG (Old-Growth Habitat), ML (Modified Landscape), and TUS (Transportation and Utility System). Management Prescriptions for these LUDs are included in this chapter. (See Tables 1-2a through 1-2c and Figure 1-2.)

Table 1-2a
Project Area Descriptions

Modified 1997 Forest Plan		Project Area			
TLMP VCU Number	TLMP VCU Acres	Project Area VCU Number	Project Area VCU Name	Project Area VCU Acres	Modified 1997 Forest Plan LUD Designation
2220	12,271	2221	10-Mile Creek	* 5,278	TM, OG, ML
2160	10,483	2160	Freshwater Creek	10,483	TM, OG, TUS
2040	35,583	2041	Game Creek	* 750	TM, OG, TUS
2200	17,265	2200	Indian River	17,265	TM, OG, TUS
2210	4,749	2210	Whip Station	4,749	OG, ML

Source: Sitka Office GIS

* denotes partial VCUs

Note: includes non-National Forest System Lands

Land Use Designations

Land Use Designation TM (Timber Production)

This LUD encompasses portions of VCU 2041, 2160, 2200, and 2221.

Goals

To maintain and promote industrial wood production from suitable timber lands, providing a continuous supply of wood to meet society's needs.

To manage these lands for sustained long-term timber yields.

To seek to provide a supply of timber from the Tongass National Forest which meets the annual and planning-cycle market demand, consistent with the standards and guidelines of this Land Use Designation.

Objectives

Within this Land Use Designation, apply the Visual Quality Objective (VQO) of Modification in the foreground distance zone as seen from Visual Priority Travel Routes and Use Areas. Apply the Maximum Modification VQO to all other areas.

Locate and design timber harvest activities primarily to meet timber objectives. Suitable forest lands are available for timber harvest; appropriate silvicultural systems may be used. Other timber management objectives include:

- seek to reduce clearcutting when other cutting methods will meet land management objectives;
- identify opportunities for diversifying the wood products industry (such as special forest products, and value-added local production);
- use forest health management to protect resource values;
- improve timber growth and productivity on commercial forest lands;
- plan, inventory, prepare, offer, sell and administer timber sales and permits to ensure the orderly development of timber production;
- emphasize the overall reduction of costs, increase of revenues, and improvement of public service within the timber program.

Provide a spectrum of recreation and tourism opportunities consistent with the capabilities of this Land Use Designation. Manage recreation and tourism use to be compatible with timber production objectives. Manage changed recreation settings in accordance with the appropriate Recreation Opportunity Spectrum class.

Plan a transportation network of roads and helicopter access that will eventually access most of the suitable timber lands for standard logging or helicopter yarding systems.

Desired Condition

Suitable timber lands are managed for the production of sawtimber and other wood products on an even-flow, Long-term Sustained Yield basis; the timber yield produced contributes to a Forest-wide sustained yield. An extensive road system provides access for timber management activities, recreation uses, hunting and fishing, and other public and administrative uses; some roads may be closed, either seasonally or year-long, to address resource concerns. Management activities will generally dominate most seen areas. Tree stands are healthy and in a balanced mix of age classes from young stands to trees of harvestable age, often in 40- to 100-acre stands. Recreation opportunities, associated with roaded settings from Semi-primitive to Roaded Modified, are available. A variety of wildlife habitats, predominantly in the early and middle successional stages, are present.

Table 1-2b
Timber Production Land Use Designation
 Apply the following Forest-wide Standards & Guidelines located in
 Chapter 4, Modified 1997 Forest Plan.

Resource	Section	Sub-Sections	Page
Air	AIR	All	4-3
Beach and Estuary Fringe	BEACH	All	4-4
Facilities	FAC	All	4-6
Fire	FIRE	All	4-7
Fish	FISH	All	4-8
Forest Health	HEALTH	All	4-13
Heritage Resources	HER	All	4-14
Karst and Cave Resources	KARST, CAVE	All	4-18
Lands	LAND	All	4-21
Minerals and Geology	MG	All	4-33
Recreation and Tourism	REC	All	4-35
Riparian	RIP	All	4-53
Rural Community Assistance	RUR	All	4-74
Scenery	VIS	All	4-75
Soil and Water	S&W	All	4-83
Subsistence	SUB	All	4-86
Threatened, Endangered, Sensitive	TE&S	All	4-88
Timber	TIM	All	4-94
Trails	TRAI	All	4-102
Transportation	TRAN	All	4-104
Wetlands	WET	All	4-111
Wildlife	WILD	All	4-112

Source: Modified 1997 Forest Plan

Land Use Designation OG (Old-Growth Habitat)

This LUD encompasses portions of VCUs 2041, 2160, 2200, 2210 and 2221.

Goals

Maintain areas of old-growth forest and their associated natural ecological processes to provide habitat for old-growth associated resources.

Manage early seral conifer stands to achieve old-growth forest characteristic structure and composition based upon site capability. Use old-growth definitions as outlined in *Ecological Definitions for Old-growth Forest Types in Southeast Alaska* (R10-TP-28).

Objectives

Provide old-growth forest habitats, in combination with other Land Use Designations, to maintain viable populations of native and desired non-native fish and wildlife species and subspecies that may be closely associated with old-growth forests.

Contribute to the habitat capability of fish and wildlife resources to support sustainable human subsistence and recreational uses.

Maintain components of flora and fauna biodiversity and ecological processes associated with old-growth forests.

Allow existing natural or previously harvested early seral conifer stands to evolve naturally to old-growth forest habitats, or apply silvicultural treatments to accelerate forest succession to achieve old-growth forest structural features. Consider practices such as

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thinning, release and weeding, pruning, and fertilization to promote accelerated development of old-growth characteristics.

To the extent feasible, limit roads, facilities, and permitted uses to those compatible with old-growth forest habitat management objectives.

Desired Condition

All forested areas within this Land Use Designation have attained old-growth forest characteristics. A diversity of old-growth habitat types and associated species and subspecies and ecological processes are represented.

Table 1-2c
Old-growth Habitat Land Use Designation
Apply the following Forest-wide Standards & Guidelines located in
Chapter 4, Modified 1997 Forest Plan.

Resource	Section	Sub-Sections	Page
Air	AIR	All	4-3
Beach and Estuary Fringe	BEACH	All	4-4
Facilities	FAC	All	4-6
Fire	FIRE	All	4-7
Fish	FISH	All	4-8
Forest Health	HEALTH	All	4-13
Heritage Resources	HER	All	4-14
Karst and Cave Resources	KARST, CAVE	All	4-18
Lands	LAND	All	4-21
Minerals and Geology	MG	All	4-33
Recreation and Tourism	REC	All	4-35
Riparian	RIP1	All	4-53
	RIP2	I,II(A-E,G,H)	
Rural Community Assistance	RUR	All	4-74
Scenery	VIS1, 12	All	4-75
	VIS11	I,II(A,E)	
Soil and Water	S&W1111,1112,2	All	4-83
	S&W112	I(A:1-4,6-7),II,III	
Subsistence	SUB	All	4-86
Threatened, Endangered, Sensitive	TE&S	All	4-88
Timber	TIM111,111-1,130,140	All	4-94
	TIM114	VIII	
Trails	TRAI	All	4-102
Transportation	TRAN	All	4-104
Wetlands	WET	All	4-111
Wildlife	WILD112	I-VIII; IX(A:1-8,11,B); X-XVIII	4-112
	WILD22,23	All	

Source: Modified 1997 Forest Plan

Land Use Designation ML (Modified Landscape)

This LUD encompasses a small portion of VCU's 2210 and 2221 near the mouth of 10-Mile Creek.

Goals

To provide a sustained yield of timber and a mix of resource activities while minimizing the visibility of developments in the foreground distance zone.

To recognize the scenic values of suitable timber lands viewed from identified popular roads, trails, marine travel routes, recreation sites, bays, and anchorages, and to modify timber harvest practices accordingly.

To maintain and promote industrial wood production from suitable timber lands, providing a continuous supply of wood products to meet society's needs.

To seek to provide a supply of timber from the Tongass National Forest which meets the annual and planning-cycle market demand, consistent with the standards and guidelines of this Land Use Designation.

Objectives

Within this Land Use Designation, apply the Visual Quality Objectives of Partial Retention in the foreground distance zone, and Modification in the middleground and background distance zones, as seen from the Visual Priority Travel Routes and Use Areas. Apply the Maximum Modification VQO to all other areas.

Suitable forest lands are available for timber harvest. Utilize appropriate silvicultural systems consistent with the adopted VQOs. Other timber management considerations include:

- seek to reduce clearcutting when other cutting methods will meet land management objectives;
- identify opportunities for diversifying the wood products industry (such as special forest products, and value-added local production);
- use forest health management to protect resource values;
- improve timber growth and productivity on commercial forest lands;
- plan, inventory, prepare, offer, sell and administer timber sales and permits to ensure the orderly development of timber production;
- emphasize the overall reduction of costs, increase of revenues, and improvement of public service within the timber program.

Provide a spectrum of recreation and tourism opportunities consistent with the capabilities of this Land Use Designation. Semi-primitive to roaded experiences may be offered. Avoid changes to semi-primitive non-motorized settings when feasible.

Design roads and associated rock quarries to meet the applicable Visual Quality Objective.

Desired Condition

In areas managed under the Modified Landscape Land Use Designation, forest visitors, recreationists, and others using popular travel routes and use areas will view a somewhat modified landscape. Management activities in the visual foreground will be subordinate to the characteristic landscape, but may dominate the landscape in the middle and backgrounds. Within the foreground, timber harvest units are typically small and affect only a small percentage of the seen area at any one point in time. Roads, facilities, and other structures are also subordinate to the foreground landscape. Recreation opportunities associated with natural-appearing to modified settings are available. A variety of successional stages provide a range of wildlife habitat conditions. A yield of timber is produced which contributes to Forest-wide sustained yield.

Table 1-2d
Modified Landscape Land Use Designation
 Apply the following Forest-wide Standards & Guidelines located in
 Chapter 4, Modified 1997 Forest Plan.

Resource	Section	Sub-Sections	Page
Air	AIR	All	4-3
Beach and Estuary Fringe	BEACH	All	4-4
Facilities	FAC	All	4-6
Fire	FIRE	All	4-7
Fish	FISH	All	4-8
Forest Health	HEALTH	All	4-13
Heritage Resources	HER	All	4-14
Karst and Cave Resources	KARST, CAVE	All	4-18
Lands	LAND	All	4-21
Minerals and Geology	MG	All	4-33
Recreation and Tourism	REC	All	4-35
Riparian	RIP	All	4-53
Rural Community Assistance	RUR	All	4-74
Scenery	VIS	All	4-75
Soil and Water	S&W	All	4-83
Subsistence	SUB	All	4-86
Threatened, Endangered, Sensitive	TE&S	All	4-88
Timber	TIM	All	4-94
Trails	TRAI	All	4-102
Transportation	TRAN	All	4-104
Wetlands	WET	All	4-111
Wildlife	WILD	All	4-112

Source: Wildlife 1997 Forest Plan

Land Use Designation TUS (Transportation and Utility System)

This potential power transmission corridor LUD crosses VCU's 2041, 2160, and 2200.

Goals

To provide for, and/or facilitate the development of, existing and future major public Transportation and Utility Systems, including those identified by the State of Alaska and the Alaska Energy Authority.

Objectives

Apply this management prescription to existing major systems corridors. Use the prescription as criteria in the planning and design of future system corridors. During the period before actual construction of new systems occurs, the management prescription(s) of the (initial) Land Use Designation(s) underlying the corridors will remain applicable. Upon initiation of construction, and during system operation, this management prescription will apply.

For application of this Land Use Designation, "major systems" are defined as State and Federal highways, railroads, powerlines 66 kV or greater, and pipelines 10 inches or greater in diameter.

Allow special uses and facilities not related to transportation or utility systems, if compatible with present or future systems.

If the development of systems changes the Recreation Opportunity Spectrum setting, manage recreation and tourism opportunities in accordance with the new setting. Consider

the development of recreation and tourism facilities in conjunction with the planning of State or Federal highways or reservoirs.

Following construction of systems, lands in the right-of-way, if permanently cleared, will be considered unsuitable for timber production.

Transportation and utility corridors, to the extent feasible, should follow the same route.

Transportation and Utility Systems may dominate the seen foreground area, yet are designed with consideration for the existing form, line, color, and texture of the characteristic landscape.

Minimize and/or mitigate adverse effects to wildlife habitat and populations to the extent feasible.

Maintain the present and continued productivity of anadromous fish and other fish habitat to the extent feasible.

Desired Condition

Transportation and Utility Systems have been constructed in an efficient and economic manner, and have been designed to be compatible with the adjacent Land Use Designation to the maximum extent feasible. The minimum land area consistent with an efficient, safe facility is used for their development. Effects on other resources have been recognized and resource protection has been provided. Other resources uses and activities in the area do not conflict with utility operations.

Table 1-2e
Transportation and Utility Systems Land Use Designation
Apply the following Forest-wide Standards & Guidelines located in
Chapter 4, Modified 1997 Forest Plan.

Resource	Section	Sub-Sections	Page
Air	AIR	All	4-3
Beach and Estuary Fringe	BEACH	All	4-4
Facilities	FAC	All	4-6
Fire	FIRE	All	4-7
Fish	FISH	All	4-8
Forest Health	HEALTH	All	4-13
Heritage Resources	HER	All	4-14
Karst and Cave Resources	KARST, CAVE	All	4-18
Lands	LAND	All	4-21
Minerals and Geology	MG	All	4-33
Recreation and Tourism	REC	All	4-35
Riparian	RIP	All	4-53
Rural Community Assistance	RUR	All	4-74
Scenery	VIS	All	4-75
Soil and Water	S&W	All	4-83
Subsistence	SUB	All	4-86
Threatened, Endangered, Sensitive	TE&S	All	4-88
Timber	TIM111-1,130,140 TIM114	All VIII	4-94
Trails	TRAI	All	4-102
Transportation	TRAN	All	4-104
Wetlands	WET	All	4-111
Wildlife	WILD	All	4-112

Source: Modified 1997 Forest Plan

How the Indian River Project Area was Selected

Prior to scheduling the Indian River Area for environmental analysis, the Forest Service analyzed all "development" LUDs on the Tongass and divided them into approximately 50 geographical areas. These areas were then grouped into approximately 18 potential project areas (including the Indian River Project Area) for which timber harvest activities could be proposed and environmental analyses completed. The potential project areas were identified based on common geographic features, past harvesting activity, pending legislative action, and estimated available volumes of timber.

The Sitka Office Assistant Forest Supervisor selected the Indian River Project Area for environmental analysis because it contains a sufficient amount of harvestable timber volume on lands designated as Timber Production LUD. Under the modified 1997 Forest Plan, harvest of the area is appropriate. Available information indicates that harvest of the amount of timber being considered for this project is consistent with the modified 1997 Forest Plan, standards and guidelines, and other requirements for resource protection. For additional details on why the Indian River Project Area was selected, see Appendix A.

Scope of the Project

National Forest planning is accomplished at two levels: the program and the project level. The program level includes Forest Plans, Regional Guides, and other multi-Forest or Regional analyses. The project level includes site-specific analysis such as timber sales and facility construction projects.

Project level planning is focused on implementation of management direction provided by program level decisions. For example, in the case of the Indian River Project, the modified 1997 Forest Plan and the Alaska Regional Guide provide the management direction. The scope of this EIS is limited to project-specific issues, actions, alternatives, and impacts. Decisions or issues associated with higher level planning and direction such as the modified 1997 Forest Plan or the Alaska Regional Guide will not be addressed or analyzed.

Public Involvement

The CEQ regulations for implementing NEPA require agencies to encourage and facilitate public involvement in decisions that affect the quality of the human environment. To that purpose, a diligent effort was made to involve the public in the Indian River Project. This included legal notices, scoping documents, public meetings, and other formal and informal public contacts. The Draft EIS, the subsequent public comment period, the subsistence hearings, and this Final EIS are a continuation of that effort. Table 1-3 summarizes the public involvement process for the Indian River Project.

The NEPA also states that there shall be an early and open process for determining the scope of issues to be addressed and for determining the significant issues related to the proposed action. It refers to this process as "scoping." Notices of Intent to initiate the project were published in the *Daily Sitka Sentinel*, the *Juneau Empire*, and the Federal Register. Public meetings were held in Angoon, Tenakee Springs, and Hoonah, Alaska to solicit information from the public. Documents were published and distributed describing the project during the scoping period. Affected Federal, State, and local agencies, as well as federally recognized Indian tribes and other interested groups and individuals were invited to participate.

Table 1-3
Public Involvement and Scoping Activities

November 1, 1995	Notice of Intent (NOI) published in the Federal Register announcing decision to initiate an EIS for the project.
November 1, 1995	Scoping document providing information and seeking public comment mailed to approximately 200 individuals and groups that had previously shown interest in Forest Service projects in Southeast Alaska. The mailing list includes Federal and State agencies and divisions, Native and municipal offices, businesses, organizations, groups, and individuals.
November 2, 1995	Meeting with Hoonah Indian Association.
November 6, 1995	Legal advertisement for NOI published in <i>Daily Sitka Sentinel</i> .
November 7, 1995	Legal advertisement for NOI published in <i>Juneau Empire</i> .
November 29, 1995	Scoping meeting in Tenakee Springs. Seven attendees from local public.
November 30, 1995	Scoping meeting in Hoonah. No attendees from local public.
December 8, 1995	Public scoping period closed. Nine letters received.
March, 1996 – January, 1997	Development of tidelands MOU with City Council of Tenakee Springs, LTF MOU Committee, and registered voter input.
April – July, 1996	Personal interviews with residents of Tenakee Springs and private outfitter and guides.
May 7, 1996	Scoping meeting in Angoon. Seven attendees from local public.
April 18, 1997	Public meeting in Tenakee Springs, for Finger Mountain Project. Twenty attendees from the local public.
September 27, 1997	Public meeting in Tenakee Springs, for Finger Mountain Project. Twenty attendees from the local public.
November 28, 1997	Notice of Availability (NOA) for Draft EIS published in the Federal Register. Legal advertisement for NOA published in <i>Juneau Empire</i> and <i>Daily Sitka Sentinel</i> .
January 13, 1998	Open house and ANILCA Section 810 hearings held in Tenakee Springs. Twenty-one attendees from the local public; ten provided testimony.
January 20, 1998	Draft EIS public comment period ends. Seventy-five sets of comments were received.
June 23, 1998	Meeting with Tenakee Springs City Council members and the public.
November 28, 1998	Project status letter sent to the public and other interested parties. The letter stated that the project would be delayed due to the poor economic situation occurring at the time, and that a Final EIS and ROD would be released in 1999.

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Collaborative Stewardship with Other Agencies

In the early 1990s, the Alaska Department of Fish and Game provided an employee to serve on a Forest Service ecosystem team ("ECOTeam") which was preparing a landscape analysis of the Northeast Chichagof Island. The ECOTeam was responsible for developing an ecosystem management approach to landscapes larger than the Indian River Project Area.

In 1995, the Army Corps of Engineers and the Environmental Protection Agency were invited to be cooperating agencies in the development of this EIS. These two agencies, as well as the Alaska Departments of Natural Resources and Environmental Conservation, have also been involved with various permitting processes with the Forest Service for this project. The U.S. Fish and Wildlife Service was informally consulted regarding Threatened and Endangered species in 1996.

The Forest Service worked closely with the City of Tenakee Springs in order to develop a use agreement for City-owned tidelands for a log transfer facility in Sunshine Cove (see Appendix L). The City ordinance approving the use agreement was voted on and approved by a majority of the registered voters (27 yes; 5 no) in January 1997.

The Forest Service met with representatives from the interagency implementation team on September 23, 1997 (U.S. Fish and Wildlife Service, Alaska Division of Governmental Coordination, Department of Fish and Game, and Department of Environmental Conservation) and October 10, 1997 (National Marine Fisheries Service and Environmental Protection Agency) to review the extent to which the modified 1997 Forest Plan wildlife standards and guidelines should be incorporated into the Indian River Timber Sale(s) Project. The wildlife standards and guidelines that were discussed included landscape connectivity, endemic terrestrial mammals, northern goshawk, and American marten. The intent of these standards and guidelines is to avoid some possible long-term cumulative effects. The meetings further developed communication with the other resource management agencies regarding the timber sale planning process. See Chapter 4, Wildlife and Threatened, Endangered, and Sensitive Species sections for more information regarding this effort in collaborative stewardship.

As directed in the modified 1997 Forest Plan standards and guidelines, consultation with the Alaska Department of Fish and Game to identify and manage important brown bear foraging sites in the Indian River Project Area occurred on September 30, 1997. See Chapter 4, Wildlife - Brown Bear section for more information regarding this effort.

Contacts with the Hoonah Indian Association

On August 3, 1994, the Forest Service and the Hoonah Indian Association (HIA) entered into a Memorandum of Understanding (MOU). The purpose of the MOU is "...to establish a framework for cooperative relationships between the Forest Service and the Hoonah Indian Association for carrying out the unique relationship and obligations the United States Government has with Indian Tribal Governments. This shall serve as a vehicle through which the Forest Service maintains a legal and political relationship with the local tribal government in Hoonah." In keeping with the spirit of this MOU, the Indian River Project Team (ID Team) has made an effort to maintain and strengthen the Forest Service's working relationship with HIA throughout the planning for this Project.

Table 1-4
Collaborative Stewardship Activities with Other Agencies

1991 through 1995	ADF&G employee participated in ECOTeam landscape analysis for the Indian River Timber Sale(s) Project.
April 24 & 26, 1995	Army Corps of Engineers (ACOE) and the Environmental Protection Agency (EPA) invited to participate in this NEPA process as a cooperating agency. No response received.
February 1, 1996	ADF&G provided a package of Draft comments during the scoping period.
February 10, 1996	DEC provided issues and comments during the scoping period.
February 15, 1996	DGC documented that no other State agencies provided issues or comments during the scoping period.
February 28, 1996	Request to ADF&G for brown bear radio-tracking points.
March 5, 1996	Request to ADF&G for commercial fishing data from Tenakee Inlet.
March 7, 1996	Heritage Resource Results and Determinations of Eligibility Sent to SHPO.
April 15, 1996	SHPO concurrence with Determinations of Eligibility submitted.
August 14, 1996	BLM consulted regarding land ownership in the Project Area.
August 19, 1996	BLM responded with the requested information.
November 29, 1996	NMFS concurrence with the Biological Assessment/Biological Evaluation for marine species.
December 17, 1996	USFWS concurrence that T&E species would not likely be adversely affected as a result of the proposed project.
March 18, 1997	Request to Alaska Department of Community and Regional Affairs for FY 1996 Federal distributions.
March 19, 1997	Request to Alaska Department of Education for number of students in area schools.
April 9, 1997	ACOE and EPA invited to participate in this NEPA process as a cooperating agency. No response received
July 15, 1997	ADNR finding of effect for the Project. Alternatives A through E will have no effect. Alternative F will have an adverse effect.
September 23, 1997	Meeting with members of the interagency implementation team (USFWS, ADGC, ADEC, ADF&G).
September 30, 1997	Consultation with ADF&G to identify and manage important brown bear foraging sites in the Project Area.
October 10, 1997	Meeting with members of the interagency implementation team (NMFS and EPA).
November 21, 1997	Draft EIS sent to ACOE and EPA offices.
December 3, 1997	Indian River Watershed Analysis sent to ACOE. Request for T&E species list update from USFWS and NMFS.
December 17, 1997	NMFS response to December 3 request; no changes.
January 8, 1998	Copy of the voter information package for the MOU ordinance vote, Marine Resources Inventory, and dive report sent to DGC.
February 25, 1998	Meeting with ADF&G to discuss agency Draft EIS comments.
February 26, 1998	Meeting with ACOE to discuss agency Draft EIS comments.
March 24, 1998	ADGC concurs with USFS determination of consistency with ACMP.
April 1, 1998	Meeting with USFWS to discuss agency Draft EIS comments.
April 6, 1998	Meeting with ADF&G to discuss agency Draft EIS comments.
April 20, 1998	Teleconference with EPA to discuss agency Draft EIS comments.
May 12, 1998	Copies of the unit pool delete/defer/add-on map sent to ADF&G, ADEC, ACOE, EPA, and USFWS.
April 27, 1999	Requested and received a copy of the latest USFWS T&E species list, includes marine mammals managed by NMFS.

Issues To Be Addressed

The NEPA requires Federal agencies to determine the scope of the issues to be addressed and to identify the significant issues related to the proposed action. For the Indian River Project, these issues were identified through the scoping process described in the previous section. Issues were raised by individuals; organizations; other Federal, State, and local agencies; and affected Indian tribes.

Issues raised during scoping were analyzed and similar issues grouped when appropriate. The following issues were determined to be significant and within the scope of the project. In formulating alternatives, each of the issues was considered and addressed in some manner in all alternatives. Other issues were considered but eliminated from detailed study because resolution falls outside the scope of this project.

Issue Area 1

Subsistence

This issue focuses on the impact of the proposed action on the availability of wildlife, marine life, and plants for customary and traditional use by rural Alaska residents. The Alaska National Interest Lands Conservation Act (ANILCA) specifically requires the Forest Service to determine if proposed activities may significantly restrict subsistence use.

The units of measure used to analyze effects regarding this issue include reduction in abundance and distribution of subsistence resources (such as habitat capability of deer), increase in competition from other resource users by community, and the ability and methods of subsistence resource users to access the Project Area.

Issue Area 2

Fish Habitat and Water Quality

Fish and water resources in Southeast Alaska are important for subsistence and recreation, as well as for ecological and economic reasons. This issue focuses on the impact of timber harvest and associated road construction on water quality and fish habitat.

The units of measure used to analyze effects regarding this issue include changes in sedimentation levels, chemical water quality, stream water temperatures, stream flows, total road miles in stream buffers, and number of stream crossings.

Issue Area 3

Biodiversity and Wildlife

This issue focuses on the impact of timber management activities on biodiversity levels, wildlife populations and overall management of ecosystems. The Project Area supports a wide variety of wildlife and plant species. Sitka black-tailed deer populations are of particular concern. Logging may reduce important winter habitat for deer and may contribute to reduced deer populations in some areas over the long term. Changes in other habitats and populations of other wildlife species may also occur.

The units of measure used to analyze effects regarding this issue include acres of wildlife habitat and habitat capability (for deer), acres of old-growth, number and size of old-growth patches, and acres of wetland.

Issue Area 4

Log Transfer Facilities (LTFs) and Camp Location

There is public concern about the location of LTFs and logging camps, and the potential environmental effects associated with their construction and operation. This issue focuses on the impact of constructing and operating LTFs at Sunshine Cove and 10-Mile Creek, and logging camp locations in Seal Bay and Corner Bay.

The units of measure used to analyze effects regarding this issue include the number and location of LTFs and logging camps.

Issue Area 5

Economic Values

Some communities in Southeast Alaska depend on timber and other natural resources from the Tongass National Forest to support their economy and lifestyles. This issue focuses on the capability of the Project Area to provide a long-term sustained flow of timber and other resources, and on whether this associated level of outputs is sufficient to meet the needs of dependent local communities.

The units of measure used to analyze effects regarding this issue include the annual number of direct and indirect job opportunities created and estimated annual average wages.

Issue Area 6

Social Values

This issue focuses on the impact of timber management activities on the social values of local communities, especially Tenakee Springs. Residents of Tenakee Springs are especially concerned about potential disruptions to their way of life that could result from such activities. Several components that make up "way of life" have been grouped under the general heading of social values. Quality of life is subjective and not easily measured.

Some of the social value concerns that residents feel could disrupt their way of life include: interference with use of the East Tenakee Trail; noise and pollution from timber management activities and logging camps; changes in visual resource quality, recreational opportunities, and subsistence opportunities; reduced eco-tourist and outfitter/guide income; water quality and fisheries resource impacts on commercial fishing income; and potential impacts on heritage, karst, and cave resources.

The units of measure used to analyze effects regarding this issue include acres by Recreation Opportunity Spectrum classification and Recreation Place, commercial recreation/tourism use and income, commercial fisheries income, subsistence measures (see Issue Area 1 above), degree of risk to heritage resources, and mapped karst vulnerability characteristics.

Issue Area 7

Alternatives to Traditional Clearcutting

During public scoping, it was suggested that a minimal amount of clearcutting be planned for the Indian River Project. Concern centered on clearcutting effects on old-growth fragmentation, fish and wildlife resources, and biodiversity. The focus of this issue is the impact of different silvicultural harvest systems on various forest resources.

The units of measure used to analyze effects regarding this issue are harvest method by acres and harvest method by volume. Habitat capability model results for deer were adjusted to reflect reduced impacts when using harvest methods other than traditional clearcutting.)

Other Issues

The NEPA also requires that issues that will not have a significant effect on the human environment or that have been covered by prior environmental review be identified and eliminated from detailed study [40 CFR part 1501.7(a)(3)]. The following issues were raised during scoping.

Ketchikan Pulp Company

Several scoping comments were received regarding Ketchikan Pulp Company (KPC), including suggestions that the KPC contract be terminated. Others felt that no timber from this Project should be provided to KPC. In March 1997, the KPC contract was mutually canceled. At this time, the timber volume from the Indian River Project is scheduled to be made available as independent timber sales.

Small Timber Sales

Maintaining a timber supply capable of supporting very small sales (as small as ten trees) and personal use is a concern. Timber sales of this size would not be precluded by this project, and could, in fact, be improved by increased access to the Project Area through road construction and reconstruction.

Permits and Licenses

To proceed with the timber harvest as addressed in this Final EIS, various permits must be obtained from other agencies. Administrative actions on these permits would take place after the Final EIS is filed with the Environmental Protection Agency. This would be no sooner than 50 days following publication of notice of this decision in the *Daily Sitka Sentinel* and the *Juneau Empire*. The agencies and their responsibilities are listed below.

U.S. Army Corps of Engineers

- Approval of discharge of dredged or fill material into waters of the United States (Section 404 of the Clean Water Act of 1977, as amended).
- Approval of construction of structures or work in navigable waters of the United States (Section 10 of the Rivers and Harbors Act of 1899).

U.S. Environmental Protection Agency

- National Pollutant Discharge Elimination Systems Review (Section 402 of the Clean Water Act).

State of Alaska, Department of Natural Resources

- Authorization for occupancy and use of tidelands and submerged lands.
- Authorization for occupancy and use of State-owned uplands.

State of Alaska, Department of Environmental Conservation

- Solid Waste Disposal Permit (Section 402 of the Clean Water Act).
- Certificate of Reasonable Assurance (Section 401 of the Clean Water Act), which certifies compliance with Alaska Water Quality Standards (Section 401 Certification).

Legislation Related to This EIS

The following laws are relevant to the preparation of EISs for actions on Federal lands. Some of these are specific to Alaska, while others pertain to all Federal lands.

Administrative Procedure Act, 1966
Alaska National Interest Lands Conservation Act (ANILCA) of 1980
Alaska Native Allotment Act of 1906
Alaska Native Claims Settlement Act (ANCSA) of 1971
Archaeological Resource Protection Act of 1980
Bald and Golden Eagle Protection Act, USC 668 (1940 as amended)
Clean Air Act of 1970 (as amended)
Clean Water Act of 1977 (as amended)
Endangered Species Act of 1973 (as amended)
Federal Cave Resource Protection Act of 1988
Forest and Rangeland Renewable Resources Planning Act of 1974
Marine Mammal Protection Act of 1972
Multiple-Use Sustained Yield Act of 1960
National Environmental Policy Act (NEPA) of 1969 (as amended)
National Historic Preservation Act of 1966 (as amended)
National Forest Management Act (NFMA) of 1976 (as amended)
Native American Graves Protection and Repatriation Act of 1990
Tongass Timber Reform Act (TTRA) of 1990
Wild and Scenic Rivers Act of 1968
Executive Order 11988 (floodplains)
Executive Order 11990 (wetlands)
Executive Order 12898 (environmental justice)
Executive Order 12962 (recreational fisheries)

In addition, the Coastal Zone Management Act (CZMA) of 1972, as amended, pertains to the preparation of the EIS. This act, passed by Congress in 1972 and amended in 1990, requires Federal agencies conducting activities or undertaking development affecting the coastal zone to ensure that proposed developments are consistent with approved State coastal management programs to the maximum extent practicable. The State of Alaska passed the Alaska Coastal Zone Management Act in 1977 to establish a program that meets the requirement of the Coastal Zone Management Act. This program as amended, contains the standards and the criteria for determining the consistency of activities within the coastal zone. The results of this determination are presented in the *Other Environmental Consequences* section at the end of Chapter 4.

Reduction of Paperwork and the Availability of the Planning Record

Reduction of paperwork as specified in 40 CFR part 1500.4 has been an important consideration in preparation of this EIS. The objective is to furnish enough site-specific information to demonstrate a reasoned consideration of the environmental impacts of the alternatives and how these impacts can be mitigated.

The Planning Record is available at the Forest Supervisor's Office in Sitka. The proposed alternatives were field verified and the planning record contains this site-specific detail. Other reference documents such as the modified 1997 Tongass Land and Resource Management Plan, the Tongass Timber Reform Act, the Resources Planning Act, and the EIS, are available at public libraries around the region as well, as at the Forest Supervisor's Office in Sitka and other Forest Service offices.

Chapter 2

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Chapter 2

Alternatives Including the Proposed Action

Introduction

Chapter 2 describes the proposed action (Alternative B), and compares it with a no-action alternative (Alternative A) and four other action alternatives developed in response to the issues described in Chapter 1. The alternative comparison in this chapter is based on the existing environment as described in Chapter 3, and the environmental effects of each alternative as discussed in Chapter 4. Alternatives considered but eliminated from detailed study are also briefly discussed, as well as enhancement opportunities, mitigation measures, and monitoring.

This chapter summarizes the key elements needed by the decision-maker. For a full understanding of the alternatives and the analysis, consider the alternative maps, the details included in Chapters 1 through 4 of the EIS, and the Appendices.

Alternative Development

The action alternatives in this EIS were developed as site-specific proposals that could clearly display environmental consequences. Collectively, they explore ways to satisfy public concerns and respond to the issues discussed in Chapter 1, while meeting the purpose and need for the project. Each action alternative responds differently to the issues. This range of alternatives will give the Assistant Forest Supervisor a basis for making an informed decision.

Standards and guidelines in the modified 1997 Forest Plan, Alaska Regional Guide, and applicable Forest Service manuals and handbooks were followed in identifying a tentatively suitable land base, from which alternatives were developed. The tentatively suitable land base within the Project Area contains approximately 140 million board feet (mmbf) of timber.

In addition to complying with the above standards and guidelines, specific areas within the Project Area were avoided to provide further resource protection. These include:

- No harvest in Old-growth Land Use Designations (LUDs). This would also help accommodate, to some degree, the concerns of Tenakee Springs residents regarding timber harvest effects on recreation and scenic quality in Tenakee Inlet.
- Avoid harvest in the Riparian Management Areas (RMAs). This would maintain riparian functions that affect water quality and wildlife habitat. (See discussion of RMAs in the Vegetation section of Chapter 3, and the Soils, Water, and Fish section of Chapter 4.)
- No harvest along Road #7502 in the area where VCUs 2221 and 2160 converge. This would maintain a wildlife corridor.
- Areas of high vulnerability karst have been deleted from the alternatives.

2 Alternatives Including the Proposed Action

Considerations In The Development Of Alternatives

The first step in formulating alternatives was to develop a logging plan that identified a "pool" of timber harvest units and associated road systems from the tentatively suitable land base. The pool was examined in the field and reviewed by the Indian River Project Interdisciplinary Team (ID Team) before it was finalized. Harvest units were then selected from the pool and assigned to each of the alternatives.

The proposed harvest units were analyzed at two levels: the Northeast Chichagof landscape level and the stand level. The landscape level considered effects of management practices over large areas (such as VCUs, watersheds, or viewsheds). At this level, timber harvest was concentrated in certain areas, with large tracts of old-growth being left undisturbed in other areas. (See the landscape ecology section in Chapter 3 for further discussion of landscape analysis.)

The stand level dealt with individual harvest units. The following concepts were considered during the selection and design of individual harvest units and roads, while assigning them to specific alternatives:

- Abrupt edges were reduced by unit placement and by feathering the edges of the units.
- In larger harvest units, the edge effect was minimized by using fringe and stream buffers for corridors between old-growth blocks.
- Stand diversity was provided by leaving snags in harvest units (where safety regulations allow), or by retaining small patches of uncut timber in harvest units where feasible and practical.

All proposed harvest units were visited to determine existing stand health and structure. Wind disturbance patterns were also noted. Based on the results of these site visits and the analysis of data gathered, five harvest methods were proposed. Three are even-aged management methods and two are uneven-aged. Each action alternative incorporates all of these methods.

Even-aged management regenerates and maintains stands in which trees of essentially the same age grow together. The three even-aged methods for this project are clearcutting with green tree retention, overstory removal, and patch clearcuts. While patch clearcuts as described in this EIS technically may be a two-aged system, for the sake of simplicity they are considered an even-aged method in this project.

Uneven-aged management regenerates and maintains multi-aged (at least three age classes), multi-layered stands by removing either individual or small groups of trees in all age classes. Three or more harvest entries are made over a complete stand regeneration cycle. The two uneven-aged methods for this project are single-tree selection and group selection. Very little is known about the ultimate success of uneven-aged management in Southeast Alaska.

Figure 2-1 Patch Clearcuts (20, 35, 50 Percent)



Even-Aged Management

20 Percent Patch Clearcuts

Patch clearcuts are harvested areas generally less than 10 acres in size, dispersed throughout a timber harvest unit. The percentage of volume to be removed from each unit varies, depending on the resource management objectives for the individual unit. Where only 20 percent of the volume would be removed, critical winter habitat for deer would be maintained (especially below 800 feet and on south-facing slopes). The remaining 80 percent of the canopy would be left to intercept snow and to encourage growth of forage plant species. Units would be evaluated for future entries in 20 to 30 years, based on the canopy closure and forage levels. (See Figure 2-1.)

35 Percent Patch Clearcuts

Where the objective is to maintain soil stability by retaining vegetation root strength, patch cuts would be designed to only remove 35 to 40 percent of the volume in the unit. Future harvest would be considered in about 20 years, and would depend on the stability of the soils and the ability of the vegetation to hold soils in place. (See Figure 2-1.)

50 Percent Patch Clearcuts

Where the objective is to maintain travel corridors to the alpine (especially for deer), patch cuts would remove 50 percent of the volume in the unit. Leaving 50 percent of the canopy would provide cover for deer and other wildlife species. Units would be evaluated for re-entry in 20 to 30 years. The decision to re-enter would be based on canopy closure. (See Figure 2-1.)

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Figure 2-2 Clearcuts with Green Tree Retention



Clearcuts with Green Tree Retention

This harvest method removes nearly all merchantable trees from a unit, leaving some snags and green trees (five percent), to comply with standards and guidelines. This results in conditions similar to those found after a large, intense wind event. Clearcutting is generally the optimum silvicultural system for old-growth hemlock-spruce forest in Southeast Alaska. Clearcutting with Green Tree Retention enables near maximum timber production. Leave trees would provide habitat for marten and cavity-nesting wildlife, and may reduce some visual impacts. Structural diversity in the new stand would be increased as well. Retained trees may be uniformly scattered across the unit, clumped into small groups, or spaced around the edges of the unit, depending on the type of yarding equipment used. (See Figure 2-2.)

Figure 2-3 Overstory Removal



Overstory Removal

Overstory Removal is new to Southeast Alaska and has not been done to any extent on the Tongass National Forest. It is proposed in the Project Area to minimize visual and soil impacts, and to use existing mid-story and understory to gain added stand structure and diversity. With this method, important old-growth attributes such as significant large tree component, snags, and large down woody material can be retained. Reserve trees may be regularly spaced or grouped to meet treatment objectives.

The managed stand structure may be two- or three-storied, depending on the existing stand conditions and marking guidelines. Overstory Removal allows for a range of moderate to heavy forest retention. Techniques for determining which trees to harvest include using tree diameter limits (where all trees under a specified diameter are maintained), or by establishing a desired volume per acre to be retained. (See Figure 2-3.)

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Figure 2-4 Group Selection



Uneven-Aged Management

Group Selection

Group Selection is a harvest method designed to facilitate natural regeneration. Clearcuts ranging from 0.5 to 2 acres in size are dispersed throughout the identified unit, removing 20 percent of the volume in the unit. Systematic harvest entries referred to as “cutting cycles” are then made at regular intervals over time, until all the volume in the unit is removed. For example, a cutting cycle removing approximately 20 percent of the trees might occur every 40 to 50 years. In this case, five cutting cycles would be needed (over a period of 160 to 200 years) to harvest the entire original stand. The end result would be a variety of age and size classes present across the unit through time.

Group Selection mimics small wind disturbance patterns occurring across much of the Project Area. Small-scale, frequent wind disturbances often result in small patches of trees being blown over, creating gaps in the stand canopy. As Group Selection is implemented over time, a similar diverse, multi-layered canopy is produced. These different canopy layers remain in distinct small areas rather than interspersed across the entire area. (See Figure 2-4.)

Figure 2-5 Single Tree Selection



Single Tree Selection

Single Tree Selection is an uneven-aged regeneration method that removes individual trees more or less uniformly throughout the unit. In order to make yarding of single-tree selection units feasible in this project, trees would be harvested in small clumps (usually four to eight trees). This regeneration method leaves a diverse, multi-layered canopy cover across the entire unit, thus addressing concerns for wildlife, soils, and scenic quality. Cutting cycles would be similar to those for the group selection units. (See Figure 2-5.)

Alternatives Eliminated from Detailed Study

The two alternatives described below were considered during the early stages of the alternative development process and were subsequently eliminated from detailed study.

An alternative was considered that would build a connecting road from the Project Area to the Salt Lake Bay LTF. This road would have extended from the end of the 10-Mile Creek road (Road 7502) to Road 7578. A subsequent log haul analysis indicated it was over twice as expensive to haul timber to the Salt Lake Bay LTF than to develop an LTF at either the Sunshine Cove or 10-Mile Creek LTF sites. Additionally, the connecting road would not comply with constraints in the Tongass Timber Reform Act (TTRA). The TTRA states that “[t]he Secretary of Agriculture shall not ... engage in any further efforts to connect the City of Tenakee Springs with the logging road system on Chichagof Island, unless the City Councils of Tenakee Springs and Hoonah both determine that the road should be constructed and so inform the Secretary.”

Another alternative considered providing access to the Project Area from the Hoonah road system by constructing a road to transport logs to the existing, permitted Kennel Creek LTF. The logging camp would be located at Kennel Creek, which would address camp location concerns raised by Tenakee Springs residents. A portion of existing Road 7500 would be eliminated near the boundary of VCUs 2160 and 2200, to comply with the TTRA requirements. Since other action alternatives in this EIS address issues related to LTF and logging camp locations, the alternative was considered redundant and was subsequently eliminated from detailed study.

Alternatives Considered In Detail

As mentioned earlier, six alternatives (five action alternatives and a no-action proposal) were considered in detail for this project. Each alternative was developed to respond differently to the issues, and to provide a range of choices for the decision-maker. Maps distributed with this EIS display the proposed roads and harvest units for each of the alternatives. Table 2-3 summarizes the volume and acres of timber harvest, logging systems, harvest methods, and roads proposed for development and use. Table 2-4 summarizes the effects of the alternatives on the resources.

Alternative A (No Action)

Alternative A represents the existing conditions in the Project Area, and serves as the base line against which the effects of all other alternatives are measured. There would be no new resource outputs associated with this alternative. No road construction or timber harvest would occur. Additional receipts to the State of Alaska would be foregone, existing timber-related jobs would not be sustained, and no new opportunities for timber-related jobs would be created. Routine maintenance (such as culvert cleaning), tree thinning, and removal of unsafe bridges may continue. (See Alternative A map and Table 2-4.)

Alternative A responds to Issue Area 3 (Biodiversity and Wildlife) by implementing timber stand improvement plans (i.e., thinning of previously harvested units) as funding allows; benefits of thinning include improved wildlife habitat. The no-action alternative also responds to Issue Areas 4 (Log Transfer Facilities and Camp Location) and 6 (Social Values); deferring timber harvest in the Project Area would result in no harvest-related noise, no disrupted use of East Tenakee Trail, no user conflicts (loggers vs. recreationists/subsistence users), nor changes in scenic resource quality. The alternative also responds to Issue Area 5 (Economic Values) by maintaining community dependence on other natural

resources than timber (such as recreation and subsistence use) in support of their economy and lifestyles.

Alternative B (Proposed Action)

Alternative B is the Proposed Action as presented during public scoping. This alternative is intended to sustain levels of biodiversity and wildlife habitat by emphasizing uneven-aged management, and by maintaining wildlife travel corridors and lower elevation old-growth forest stands throughout the Project Area. Although many acres and units are entered, uneven-aged management maintains habitat characteristics; changes in scenic resource quality are also reduced. (See map of Alternative B and Tables 2-3 and 2-4.)

Alternative B particularly addresses Issue Area 7 (Alternatives to Traditional Clearcutting) by harvesting the least amount of acres using clearcut harvest methods. It also responds to concerns in Issue Area 6 (Social Values) regarding noise, scenic quality, and disruption of saltwater fishing in the areas of the log transfer facilities (LTFs). Since use of two LTFs is proposed, smaller harvest volumes would be moved through each, thus reducing impacts and recovery times at each site.

The alternative proposes to harvest 23.6 mmbf of timber (sawlog and utility) on 1,821 acres. This figure differs from that published in the Notice of Intent (34.3 mmbf) due to more accurate volume-per-acre estimates and field-verified refinements to unit boundaries. There would be approximately 7.8 miles of new road construction and 22.3 miles of reconstruction.

The former LTF at Sunshine Cove (VCU 2200) would be reconstructed and a new LTF near the mouth of 10-Mile Creek (VCU 2210) would be constructed. Both LTFs would be drive-down ramps. A floating log camp would likely be located at Corner Bay (across Tenakee Inlet). Log rafts from the 10-Mile Creek LTF would likely be stored at Seal Bay (also across Tenakee Inlet) due to lack of protection from wind and waves at the 10-Mile Creek site.

Mitigation measures (such as retaining walls or anchored piers) are incorporated into the design of the 10-Mile Creek road accessing saltwater. These design measures would reduce the risk of slope failure and potential impacts to other resources.

Road Management Objectives (RMOs) for this alternative include keeping mainline roads open at Maintenance Level 2 (passable by high clearance vehicles), and closing temporary roads after use. Drainage structures would be removed. Roads 75004, 75012, 75003, 75007, 75021, and 7502 would be closed. (See Appendix D for detailed descriptions of maintenance levels.)

Alternative C (Preferred Alternative)

Alternative C reduces impacts on the community of Tenakee Springs by concentrating timber management activities in the Freshwater Creek and 10-Mile Creek drainages, and the upper portion of Indian River drainage. Harvest systems would include cable, helicopter, and shovel yarding systems. Some units are prescribed for uneven-aged management. (See map of Alternative C and Tables 2-3 and 2-4.)

Alternative C presents an overall balanced treatment of the issues, with a mix of resource outputs. Economic and social values concerns regarding disruption of recreation/tourism in the lower Indian River drainage (Issue Areas 5 and 6) are addressed in the long-term by avoiding harvest activities in this area.

The alternative proposes to harvest 28.3 mmbf of timber (sawlog and utility) on 1,781 acres. There would be approximately 9.1 miles of new road construction and 21.7 miles of reconstruction.

2 Alternatives Including the Proposed Action

The former LTF at Sunshine Cove would be reconstructed as a drive-down ramp. A floating logging camp would likely be located at Corner Bay (across Tenakee Inlet).

RMOs for this alternative include keeping mainline roads open at Maintenance Level 2 for administrative use only. Temporary roads would be closed. Drainage structures would be removed on roads 75004, 75012, 75007, 750071, 7508, 7501, 75021, 75028, and 7502. The LTF at Sunshine Cove could be removed and both gates on Road 7500 would be closed.

Alternative D

Alternative D reduces potential timber harvest impacts on the community of Tenakee Springs to a greater extent than Alternative C, by deferring most harvest activities in the Indian River watershed (VCU 2200). This alternative concentrates harvest in Freshwater and 10-Mile Creek drainages, with only one unit in the upper Indian River drainage. The resulting emphasis is on clearcut harvest to improve economic efficiency. Harvest systems would include cable, helicopter, and shovel yarding systems. Uneven-aged management would be utilized where necessary to maintain resource values. (See map of Alternative D and Tables 2-3 and 2-4.)

Alternative D particularly addresses Issue Area 5 (Economic Values) by proposing to only harvest one unit in the Indian River drainage, and to use the 10-Mile Creek LTF site. This would avoid disrupting the recreation/tourism income generated in the Indian River drainage and Sunshine Cove. It also responds to concerns in Issue Area 6 (Social Values) by only minimally disrupting use of the East Tenakee Trail for a few days; by generating almost no noise in Sunshine Cove or the Indian River drainage; and by decreasing the wildlands experience of the area the least.

The alternative proposes to harvest 23.4 mmbf of timber (sawlog and utility) on 1,513 acres. There would be approximately 9.1 miles of new road construction and 10.7 miles of reconstruction.

Alternative D utilizes a drive-down ramp LTF that would be built at the proposed 10-Mile Creek site. A floating logging camp and log raft storage area would likely be located at Seal Bay.

Mitigation measures such as retaining walls or anchored piers have been incorporated into the design of the 10-Mile Creek road accessing saltwater. These design measures would reduce the risk of slope failure and potential impacts to other resources.

RMOs for this alternative include closing all roads to motorized vehicles after harvest and maintaining all system roads at Maintenance Level 1. Both gates on Road 7500 would be closed. All bridges would be removed in VCUs 2041, 2160, and 2221. In VCU 2200, unsafe log stringer bridges would either be removed or warning signs would be posted.

Alternative E

Alternative E emphasizes maintenance of deer habitat. This would be accomplished by leaving large blocks of old-growth forest on the south-facing slopes in the Indian River drainage and the lower elevations at 10-Mile Creek above the estuary. Harvesting would be done in all three drainages. Elements of Landscape Ecology (for example, maintaining large blocks of unfragmented old-growth, and consideration of patch size) are emphasized in the alternative design. (See map of Alternative E and Tables 2-3 and 2-4.)

Alternative E particularly addresses Issue Areas 1 (Subsistence) and 3 (Biodiversity and Wildlife), in that it reduces acres of deer habitat, old-growth, and wildlife riparian habitat the least. It also responds to concerns in Issue Area 4 (Log Transfer Facilities and Camp Locations) by proposing to harvest the smallest amount of volume and using only one LTF and logging camp for the shortest period of time. Issue Area 6 (Social Values) is addressed by changing scenic resource quality the least.

The alternative proposes to harvest 24.3 mmbf of timber (sawlog and utility) on 1,596 acres. There would be approximately 8.4 miles of new road construction and 21.6 miles of reconstruction.

The former LTF at Sunshine Cove would be reconstructed as a bulkhead to facilitate loading logs on barges. An upland camp would likely be located at Corner Bay.

RMOs for this alternative include closing all temporary roads, and removing all bridges in VCUs 2041, 2160, and 2221. The Sunshine Cove LTF bulkhead would be removed. Both gates would be closed on Road 7500; the road would be maintained at Level 2 (high clearance vehicle) for administrative traffic only. The remaining roads in VCU 2200 would be closed, with drainage structures removed.

Alternative F

In Alternative F, harvesting would be concentrated in all three drainages (Indian River, Freshwater, and 10-Mile Creek). The alternative emphasizes timber sale economic efficiency and receipts to Federal, State, and local governments by utilizing cost efficient, ground-based yarding and harvest systems. Helicopter yarding systems would be used only where necessary. Uneven-aged management is utilized where necessary to maintain resource values. (See map of Alternative F and Tables 2-3 and 2-4.)

Alternative F particularly addresses Issue Area 5 (Economic Values), in that it generates the largest income and opportunity for jobs.

The alternative proposes to harvest 36.6 mmbf of timber (sawlog and utility) on 2,261 acres. There would be approximately 9.6 miles of new road construction and 22.0 miles of reconstruction.

A new LTF (Sunny Too), approximately 1,000 feet west of the former LTF at Sunshine Cove, would be constructed as a bulkhead to facilitate barging. A floating logging camp would likely be located at Corner Bay.

RMOs for this alternative include closing all temporary roads, and removing all bridges in VCUs 2041, 2160, and 2221. The Sunny Too LTF bulkhead would be removed. Only administrative (high clearance vehicle) traffic would be allowed on Road 7500 in VCU 2200. Recreational traffic would be discouraged on this road segment by closing both gates. On the newly built portions of Road 7500 in VCUs 2160 and 2041, drainage structures would be removed, and the road would be placed in Maintenance Level 1. Drainage structures would be removed on Roads 7508, 750071, 75004, 75028, 75012, 75003, and 75007.

Actions Common to All Alternatives

All action alternatives would include building roads and log transfer facilities (LTFs), harvesting timber, and providing camp facilities for workers. A range of options and methods is available for each of these activities, as described below. With these defined, their effects on the natural resources can be evaluated.

Roads

Timber harvest in Southeast Alaska typically requires roads for transporting logs from harvest units to a LTF. All roads on the National Forest are built to appropriate standards to handle planned traffic and minimize environmental impacts. A typical road network is made up of specified arterial, collector, and local roads. Arterial and collector roads are the backbone of the transportation system, accessing large land areas. They provide long-term access for recurrent resource management activities. Local roads often branch from arterials and collectors to access small groups of units or a single unit.

In addition to these, the timber purchaser constructs temporary roads when needed for one-time, short-term harvest access. After log haul is completed, temporary roads are closed by installing waterbars in the roadbed and removing drainage structures. The miles of planned road construction for each alternative are displayed in Table 2-3.

Once constructed, the forest road system is managed to provide necessary access for accomplishing land use objectives and activities. Environmental protection, user safety, recreation, and road maintenance for future use are taken into consideration in planning for road management. Roads may be kept open, physically or administratively closed, or obliterated. Common methods of road closure include bridge removal, signing, gating, and barricading. Roads that are permanently closed have all drainage structures removed, to provide free passage of storm runoff. Rock can be removed from temporary roads, and stockpiled for use in future road construction. Tables in Appendix D indicate how the roads in this project would be managed following timber harvest. In accordance with the Tongass Timber Reform Act (TTRA), no road would connect the Indian River road system to the Game Creek roads or any other Chichagof Island road system.

Log Transfer Facilities (LTFs)

Low-Angle Ramp (Alternatives B, C, D)

The low-angle, or drive-down ramp is a LTF constructed of rock, placed on a 10- to 12-percent grade. The running surface width of the ramp varies from 20 to 30 feet, and may include armor rock for protection from wave action. The low end of the ramp terminates at a -2.0 foot elevation. A log stacker or front-end loader carries the log bundle down to the ramp and places the bundle in the water. The ramp has a low profile and blends in with the surrounding terrain. Construction costs are low (\$5,000 to \$15,000) and the "footprint" (LTF area) is kept to a minimum (less than 0.25 acre). Velocity of log bundles entering the water is near zero.

Bulkheads (Alternatives E and F)

Bulkheads are operations platforms used for placing log bundles either directly into the water (for rafting) or onto barges with the assistance of an A-Frame, crane, or front-end loader. Bulkheads have been constructed from a variety of materials. The most common is the native log crib. Steel rail cars and sheet piling are two other types of material used.

Small Barge. Small barges carry approximately 400 mbf of timber. Bulkheads used to transfer logs to a small barge are sited in water depths of -2.0 feet, with a top elevation of +12.0 feet. The bulkhead face is 30 feet wide. Construction costs are low, ranging from \$10,000 to \$20,000. The footprint is kept to a minimum (less than 0.25 acre). Small barge

bulkheads can also be used for equipment off-loading, which minimizes impacts to intertidal waters.

Large Barge. Large barges carry approximately 1,200 mbf of timber. Bulkheads used to transfer logs to a large barge are sited in water depths of -12.0 feet, with a top elevation of +24.0 feet. The bulkhead face is 40 feet wide. Construction costs are high, ranging from \$150,000 to \$300,000. The footprint is usually less than 0.40 acres. A large barge bulkhead requires a separate equipment off-loading facility, which increases impacts to intertidal waters. This type of LTF is designed for permanent installations, and has a 40- to 50-year design life.

Log Rafting and Storage Areas

When logs are placed directly into saltwater for rafting, an area is needed at or near the LTF to form the logs into rafts. The water area needed to construct these rafts is usually 400 feet by 700 feet. The rafting area is located in deep enough water so that the rafts will not go aground. Harvested logs are trucked from the woods to the LTF, then banded together, placed into the water, and moved to their respective rafts by a boom boat. The logs are usually sorted into three different types of rafts (sawlog, pulp log, and cedar) prior to being towed to the mill. The Forest Service is required to obtain permits for the rafting area from the U.S. Army Corps of Engineers, Environmental Protection Agency, and the State of Alaska.

Log rafts from the 10-Mile Creek LTF would likely be stored at Seal Bay, due to lack of protection from wind and waves in the 10-Mile Creek LTF area. Log rafts from the Sunshine Cove LTF would be stored in Sunshine Cove.

Camp Facilities

The size of timber sale logging camps in the Project Area will depend on the size and combination of sales. For sales ranging from 10 to 15 mmbf, camps should accommodate from 30 to 100 people. Land-based logging camps are usually family camps. Living and office space are provided by temporary modular structures and mobile homes, and one or more rough-lumber equipment storage and maintenance shops. A diesel-powered generator supplies electricity. A typical floating camp provides the living and office space on a single barge-type structure, with primary water and sewage treatment systems. A diesel-powered generator supplies electricity on the barge.

An upland or floating camp at Corner Bay would be the most likely place to support a LTF in the Sunshine Cove area. Corner Bay is located approximately three miles south of the Project Area. Access to the Project Area would be by boat across Tenakee Inlet. With the camp not located near the LTF, a watchman trailer and maintenance shop would likely be required at the LTF site. A floating camp would be required to support the proposed LTF at 10-Mile Creek. The camp would probably be in Seal Bay, which is located approximately two miles south of the 10-Mile Creek LTF. Access to the LTF would be by boat across Tenakee Inlet. Regardless of location, any logging camp would have to have appropriate permits from State or Federal agencies.

Logging Systems

Yarding or skidding is the process of moving felled logs from the stump to the landing. This can be done with ground-based equipment (shovels), cable logging systems (running skyline, live skyline, and slackline), or helicopters. The method used depends on factors such as access, topography, slope, and resource protection needs. Cable, shovel, and helicopter logging systems are proposed in the action alternatives.

The moist, soft soils and steep slopes in the Project Area make it difficult to operate ground-based equipment such as track- or rubber-tired skidders. Except for shovel yarding with track-mounted log loaders, there has been little opportunity to use this type of equipment. Shovel logging is the process of moving logs with a log loader. It is generally limited to slopes of less than 30 percent. Portions of proposed harvest units that are designated for cable yarding may be suited for shovel yarding.

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Helicopter logging has been established as a viable logging system on the Tongass National Forest. Logs are lifted off the ground and flown (usually downhill) to landings or salt water. This system causes the least impact to soils and minimizes road construction, but has the highest yarding cost. Helicopter logging is approximately two to three times more expensive than ground-based logging. Helicopters are typically used in situations where road access is precluded, or where other yarding systems would cause unacceptable soil displacement or vegetation damage. Helicopter yarding distances can be as much as a mile or more, but the high cost of operations usually restricts their use to distances of 3,000 to 4,000 feet. (See Glossary for further discussion of logging systems.)

All of the above logging systems may be used for clearcut harvest. For partial removal of the standing timber (with the objective of retaining regeneration, individual trees, or groups of trees), the preferred logging systems are uphill running skyline, uphill live skyline, or helicopter. These systems obtain the necessary lift and control of the logs during yarding to prevent damage to residual trees. Table 2-1 compares proposed logging system acreages for the action alternatives.

Each logging system has advantages, disadvantages, and constraints that limit its applicability. The logging systems proposed for harvest units in the Indian River Project address the advantages of each system within these constraints.

Stream Protection Measures

All alternatives include measures that protect water quality and fish habitat, such as Best Management Practices (BMPs), TTRA buffers, and Riparian Management Areas (RMAs). The TTRA mandates a minimum 100-foot buffer on all Class I streams and on Class II streams that flow directly into Class I streams. The buffer width may be greater than 100 feet due to topography, riparian soils, a windfirm boundary, timber stand boundaries, logging systems requirements, and varying stream channel locations. In addition, RMAs include Class III streams that influence water quality; these streams have been buffered to the slope break of the channel or to a windfirm boundary to protect water quality. Besides protecting water quality and fish habitat, these measures maintain riparian habitat important to other species such as brown bears and furbearers. (See the Soils, Water, and Fish section in Chapter 4 for a detailed discussion of RMAs and stream protection measures.)

Comparison of Alternatives by Identified Issue

The following sections compare the alternatives by identified issue, proposed activity, and environmental consequence. This comparison draws together conclusions from information presented throughout the EIS, and briefly summarizes analysis results. The no-action alternative (Alternative A) is the baseline for comparing. (See Tables 2-3 and 2-4 for numerical comparisons.)

Issue Area 1

Subsistence

Concerns about potential impacts of further deer winter range reductions affecting subsistence deer hunting needs were evaluated. No significant possibility of a significant restriction to subsistence use was found for any Indian River Project alternative. (See Subsistence, Table 4-24). Alternative E has the least potential effect (reduced habitat capability) on subsistence use of deer; Alternative F would have the highest effect.

However, considering cumulative effects, it is projected that there is a significant possibility in all alternatives (including the no-action alternative) of a significant restriction for subsistence use of deer. Over the short term (year 2010), this is due to the likelihood of a critical winter occurring on average once every 11 years, resulting in season and/or bag limitations. Over the long term (year 2095), this is due to demand that cannot be met from an ever increasing human population on a smaller supply of deer.

The area used by Tenakee Springs residents to harvest 90 percent of their deer would retain sufficient habitat capability to meet all current, local subsistence demand. This area, however, is unable to meet non-subsistence demands under all alternatives, including the no-action alternative. This indicates that there may be a need to restrict non-subsistence harvests of deer in the Tenakee Inlet area on a season-by-season basis.

Issue Area 2

Fish Habitat and Water Quality

Maintaining stream buffers on all Class I and II streams, and Class III and IV streams as prescribed, along with avoiding Riparian Management Areas, will result in no significant direct, indirect, or cumulative effects on fish or water resources in all of the action alternatives.

Issue Area 3

Biodiversity and Wildlife

Direct and indirect effects on wildlife habitat for Management Indicator Species (MIS) would occur in all action alternatives as a result of timber harvest and road construction reducing wildlife habitat acreage. The estimated habitat loss for Sitka black-tailed deer ranges from 4 to 7 percent under the action alternatives. Effects were reduced to acceptable levels in all alternatives by maintaining old-growth habitat in non-development land use designations (28 percent of the Project Area is in Old-growth Habitat LUD), maintaining 1,000-foot beach and estuary fringes, maintaining stream buffers, maintaining a minimum of 5 percent canopy structure in all harvest units, and maintaining Riparian Management Areas. In addition, some portions of Timber Production and Modified Landscape LUDs would remain undeveloped, due to oversteepened slopes, unstable soils, and inability to access timber stands.

Since the majority of harvest would occur in old-growth habitat, habitat reductions are proportional to the acres harvested. Alternative F proposes to harvest the most acres, and results in the largest reduction. Alternative E harvests the least acres and would reduce old-

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growth habitat the least. Reductions in wildlife riparian habitat would also occur in all action alternatives, with Alternative F reducing the most and Alternative E reducing the least.

All action alternatives propose only limited harvest within wildlife travel corridors in the Project Area. Wildlife travel corridors are also maintained in the estuary and beach fringe buffers, RMA buffers, and by applying Road Management Objectives. (See connectivity discussions in the Wildlife section of Chapter 4. Also see Appendix D.)

During the modified 1997 Forest Plan revision planning process, the Forest Plan team developed a network of old-growth Habitat Conservation Areas (HCAs) to address wildlife population and biodiversity. No harvest is allowed in these HCAs for this project.

Effects of the alternatives on old-growth patches were evaluated for this project. In all action alternatives, the greatest impact would be the fragmentation of large patches into smaller patches. The action alternatives would result in another decrease of five percent or less in the contiguous old-growth acres, across Northeast Chichagof Island.

In summary, it is unlikely that this project will have a major effect on biodiversity or wildlife species. This conclusion is based on analysis of the effects on habitat acre changes for Management Indicator Species; mitigation measures such as maintaining structure in harvest units; and analysis of old-growth patch distribution and size. (See the Wildlife section in Chapter 4.) Cumulatively, none of the alternatives differ significantly.

Issue Area 4

Log Transfer Facilities and Camp Location

Three log transfer facilities (LTFs) are considered in this project. Alternative B would have two LTFs: a new facility near the mouth of 10-Mile Creek and another at the former Sunshine Cove LTF site. Alternatives C and E would reconstruct the former Sunshine Cove LTF. Alternative D would use only a new site near the mouth of 10-Mile Creek. Alternative F proposes a new LTF in Sunshine Cove (labeled “Sunny Too”), located west of the former site. Use of either Sunshine Cove site would impact the use of East Tenakee Trail. Potential conflicts between pedestrian and logging traffic would occur during timber sale activities, which would normally occur between March and November for three to five years. Mitigation measures have been developed to reduce the potential conflict. (See Appendix C, and the Heritage Resources section in Chapter 4.)

Use of the 10-Mile Creek LTF site (Alternatives B and D) and the Sunny Too site (Alternative F) would conflict with the terms of the Memorandum of Understanding (MOU) with Tenakee Springs (see Appendix L). Use of the former LTF site in Sunshine Cove (Alternatives C and E) would not conflict with the MOU.

All action alternatives assume that logging camps will be located outside the Project Area. In Alternatives B, C, E, and F, the timber purchaser would likely locate either a floating or a land-based logging camp in the Corner Bay area, which is south and across Tenakee Inlet from the Project Area. The floating camp location for Alternative D would likely be at Seal Bay, which is across the Inlet from the proposed LTF at 10-Mile Creek. All of these proposed camp locations meet the terms of the MOU with Tenakee Springs.

The proposed camp locations address the issues of noise pollution and disruption of community activities to Tenakee Springs’ residents. Camp noise impacts would be minimal, if any. However, some noise pollution to Tenakee residents/visitors may be anticipated by any alternative using either of the Sunshine Cove LTFs.

Also, with the camps located away from the Project Area, there is less likelihood of competition for deer and marten (the prime source of hunting and trapping activities).

Issue Area 5

Economics

Implementation of an action alternative would create opportunities for an estimated 196 to 304 jobs over a four-year period. These jobs would generate approximately \$8.4 million (Alternative B) to \$13 million (Alternative F) in income. These figures represent both direct and indirect employment and income effects, and were calculated using the IMPLAN economic model. The City of Tenakee Springs would receive income for use of the Sunshine Cove tidelands. This income would be based on volume, user fees, and taxes, in accordance with a Memorandum of Understanding between the Forest Service and the City of Tenakee Springs (see Appendix L).

A decline in recreation/tourism income in Tenakee Springs is likely in all action alternatives proposing an LTF in Sunshine Cove. This is due to potential visual and noise disturbances, and the possible lack of access to the Indian River Road during the hunting season. Alternative D, which proposes very little harvesting in the Indian River drainage and no LTF in Sunshine Cove, would have the least effect on recreation/tourism income.

For Alternative C, recreation/tourism income would likely return to pre-sale levels following timber harvest, since the lower drainage of Indian River would not be altered by harvesting timber. While Alternative B harvests timber throughout the Project Area, potential impacts would be mitigated by emphasizing uneven-aged management. This would allow the area to recover quickly which, in turn, would allow for a more wildland recreation experience and resultant return of recreation/tourism income to pre-sale levels. Under Alternatives E and F, recreation/tourism income would not return to pre-sale levels as quickly as Alternative B, due to their emphasis on clearcut-with-retention harvest methods.

In all action alternatives, the noise from timber sale activities may decrease the ability of Tenakee Springs businesses and independent guides to provide a wildlands experience for tourists. The noise would impact portions of the Project Area during active timber harvest (March through November for three to five years).

Implementation of any of the alternatives is not expected to have any major direct, indirect, or cumulative impacts on the economics of the local communities and their residents. This is due largely to their dependence on commercial fishing and subsistence, rather than timber, as the primary factors influencing the communities.

Issue Area 6

Social Values

The issue of social values has a number of interrelated facets, primarily centered around potential disruptions to Tenakee Springs residents' way of life resulting from proposed timber management activities. While each identified sub-issue is addressed separately below, many of them are intricately intertwined. The subsistence, log transfer facility and camp location, and economics issue discussions above also address social values issues.

Impacts to East Tenakee Trail Use. Hikers walking the trail would expect to hear the noise of an active timber harvest, in action alternatives B, C, E, and F. The noise would originate from either LTF generators in Sunshine Cove, or truck traffic.

In all action alternatives, trail use could be disrupted during road reconstruction. Alternative D would have the least impact on trail users, because once the heavy equipment has passed through the area, this portion of road would no longer be used for this project. Alternative F would have the largest impact, because the trail would be moved and modified to accommodate construction of the Sunny Too LTF. In all action alternatives, the contractor would be required to maintain clear access to the East Tenakee Trail during sale operations.

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Impacts on the City of Tenakee Springs Residents and Visitors. In all action alternatives, the direct effect of noise on Tenakee Springs would probably be minimal. A ridge system lies between the town and the main timber harvest areas. Harvest activities in Alternative D are at least eight miles from Sunshine Cove. Under the other action alternatives, harvest activities are three to six air miles from the town. The noise, however, may decrease the ability of Tenakee Springs' businesses and independent guides to provide a wildlands experience for tourists. The noise would impact portions of the Project Area during active timber harvest.

The Tidelands Memorandum of Understanding between the Forest Service and the City of Tenakee Springs stipulates that helicopters (used for harvest and personnel transport) would only be allowed a certain flight path in the timber sale area except in case of emergency. This provision would confine the helicopter noise to certain designated areas. (See Mitigation Measures in Appendix C.)

No alternative should affect the Project Area fish populations. Riparian Management Area prescriptions are expected to prevent any degradation to the aquatic resource. For further information see the Soils, Fish and Water section in Chapter 4.

No reduction in sport deer bag limit or season is expected as a result of this project. For further information, see the Wildlife, Subsistence, and Recreation sections in Chapter 4.

All or most Indian River roads may not be available for recreation use during the sale due to possible conflicts with logging operations and LTF use. Alternative D would have the least impacts because the main Indian River drainage road would be available.

In Alternatives D, E and F, proposed RMOs would close all roads following completion of harvest. This would reduce the Indian River Road System Recreation Place by 81 percent.

Recreation activities by Tenakee Springs' residents and tourists would be disrupted to some extent during harvesting. Alternative D would have the least impact: Sunshine Cove LTF would only be used to off-load heavy equipment at the beginning of the project, and only one harvest unit would be taken from the Indian River drainage. Alternative F would have the most impact; it has the highest harvest volume, and would use a LTF in Sunshine Cove. Following harvest, recreation activities would take place in a more developed environment.

Impacts to the 10-Mile Creek Area. In Alternatives B and D, there would be noise and visual impacts at the 10-Mile Creek LTF site. Alternative B would have less effect than Alternative D, because less volume is transferred at 10-Mile Creek. Alternatives C, E, and F would not use this LTF site.

Log rafting and transporting may disrupt fishing at the 10-Mile Creek LTF during active timber harvest (three to five years). No saltwater habitat loss is anticipated.

In Alternatives B and D, the 10-Mile Recreation Place experience would change from Semi-Primitive Motorized (SPM) to Roaded Modified (RM). (See the Recreation sections in Chapters 3 and 4 for a full discussion of Recreation experiences.) The proposed RMOs for Alternative B would also add the 10-Mile Creek LTF development into the large, maintained Indian River Road System Recreation Place.

Impacts to Karst Resources. No degradation is expected to karst resources during or after harvesting and road building in any of the action alternatives. Recreational use of the resource may be curtailed during active timber harvesting, due to lack of road access.

Impacts to Heritage Resources. The East Tenakee Trail has been determined eligible for inclusion on the National Register of Historic Places. Only Alternative F impacts the trail. A determination of effect has been submitted to the State Historic Preservation Office (SHPO). A detailed mitigation plan would be developed in cooperation with Federal, State, and local governments if this alternative were selected. See the Heritage Resources section in Chapter 4.

Impacts Caused by Logging Camps. Forest Service contractor's compliance with State and Federal laws would address potential pollution problems from the logging camps and timber management activities. Tenakee Springs' concerns have been addressed by locating the camp away from the Project Area. The camp would likely be at Seal Bay in Alternative D, and at Corner Bay in all other action alternatives. (Additional information on logging camps is in the Transportation System section of Chapter 4.)

Impacts to the Sunshine Cove Area. Alternative D would have the least impact on recreational use of the Sunshine Cove shoreline because the cove would only be used for mobilization (unloading heavy equipment from barges at high tide onto the State of Alaska right-of-way easement to access the Indian River road). Of the alternatives that use a LTF in Sunshine Cove, Alternative B has the smallest timber volume and would also be using the 10-Mile Creek LTF. These two factors would limit the disruption of Sunshine Cove recreation use. Alternative F would have the highest impact to the non-National Forest shoreline; the new Sunny Too LTF in this alternative would have a much larger visual impact than the former LTF, extending 200 feet into the cove and projecting 5 – 10 feet higher than the mean-high tide.

Both LTF sites at Sunshine Cove could displace private fishing guides for three to five years due to log rafting and transport. A small area (less than one acre) of tidal habitat would be filled for the LTF site.

Impacts to the Overall Recreation Use of the National Forest System land in the Project Area. In all cases, the area would change from a more wild experience to a more developed one. Alternative D would have the least impact on the existing recreation experience, with a 26 percent acreage change in Semi-Primitive Non-Motorized (SPNM) and a 1 percent acreage change in Semi-Primitive Motorized (SPM). The Roaded Modified (RM) acreage would increase from 20 percent to 47 percent. Alternative F would have the most effect on the existing recreation experience. (See the Recreation sections in Chapters 3 and 4 for a full discussion of Recreation experiences.)

The road system's inventoried recreation opportunities would be classified as Roaded Modified because of harvest-related disturbances. In Alternative D, the roads in the Indian River drainage would revert to a Roaded Natural or Semi-Primitive Motorized experience sooner than the rest of the Project Area because there would be no new disturbance in this entry.

During this entry, Alternative F would visually disturb the Project Area landscape the most and Alternative E the least. Alternative D would have the least visual disturbance in the immediate Indian River drainage.

Considering the cumulative effects of harvest and rehabilitation at LTFs, the Recreation Place recreation opportunity would remain RM until the areas regain the qualities of a Roaded Natural (RN) experience. This would likely occur after approximately five years. Qualities of a Semi-Primitive Motorized (SPM) experience would be regained after approximately ten years.

The existing Recreation Sites (Sunshine Cove anchorage, the beaver ponds area, dispersed camp sites in the 10-Mile Creek area, a cave, a trail leading to alpine on the Freshwater/10-

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Mile Pass) would not be disturbed in any alternative. Access to some sites could be impeded, however, depending upon the proposed RMOs. In Alternatives D, E and F, the proposed RMO would not maintain the road system for recreation traffic. The sites affected would be the cave and the trail.

Issue Area 7

Alternatives to Traditional Clearcutting

Traditionally, the term “clearcut” refers to the harvest method in which the entire timber stand within a unit is harvested. All clearcuts under this project would retain at least five percent of the stand, to comply with standards and guidelines. These units would therefore not truly be traditional clearcuts. However, in order to serve as a standard against which to compare alternative harvest methods, these clearcuts with green tree retention are referred to as traditional clearcuts for this project. Alternative B has the smallest number of acres (783) harvested by this method, and Alternative F has the largest number of acres (1,401). (See Table 2-3.)

Using ground-based systems (shovel, cable, and tractor logging) for traditional clearcutting has provided the highest economic return. The use of helicopters for non-traditional harvesting (patch clearcuts and group selections) is very costly, and therefore would have a correspondingly lower economic return. Alternative F proposes a higher percentage of clearcut volume than the predominant partial harvest methods in Alternative B. Of the action alternatives, Alternative F would result in the greatest net stumpage value, most jobs, and the greatest increase in regional income.

There are also areas where, due to unstable ground or distance from the nearest road, helicopter logging is currently the only means available. This type of logging has fewer impacts to nearly all resources, but is more expensive than other methods. (See Table 2-3.)

Proposed Harvest Units or Combinations of Harvest Units Over 100 Acres

There are no proposed harvest units or combinations of harvest units that create openings greater than 100 acres in any of the Indian River Project Area alternatives.

Post-harvest Silvicultural Treatments

Reforestation is the process of establishing a new forest on harvested areas. The Forest Service is required by law (NFMA), regulations, and policies to plan timber harvests only on lands where there is assurance that such lands can be regenerated within five years after harvest is completed. Reforestation can be accomplished by natural seeding from surrounding timber stands or by planting. Natural regeneration is the method of choice in Southeast Alaska and usually produces satisfactory results. Where necessary, post-harvest silvicultural treatments will include hand planting and precommercial thinning.

Hand Planting

Hand planting may be necessary or desirable when a natural source of seed for a desired species is inadequate to maintain a timber stand's current species composition, or when it is desirable to reduce the time needed for natural regeneration. The number of acres to be hand planted to maintain species composition can be reasonably estimated before harvest. Table 2-1 displays, by alternative, the potential acres identified for hand planting. Post-harvest restocking surveys will assess the adequacy of natural regeneration and may identify additional areas needing hand planting. (See Appendix C for more information on proposed hand planting.)

Table 2-1 Units Proposed for Hand Planting		
Alternatives	Total Acres	Units
B	146	2220, 2310, 2810, 2820, 62720, 63840, 63920
C	209	2810, 2820, 3112, 60420, 62730, 62840, 63110, 63510, 63920, 63960, 63970, 63971, 65013
D	114	60420, 62730, 62840, 63110, 63510, 63920, 63960, 63970, 63971, 65013
E	156	2310, 2340, 3020, 62720, 62730, 62740, 62840, 62850, 63110, 63510, 63920, 63960, 63970, 63971, 65013
F	281	2220, 2310, 2340, 2810, 2820, 3010, 3020, 3112, 60420, 62730, 62840, 63110, 63510, 63920, 63960, 63970, 63971, 65013

Source: USDA Forest Service SIS 1996

Precommercial Thinning

Natural regeneration often results in dense stands of trees. Precommercial thinning is used to regulate the growth of young trees for timber production values and wildlife benefits. By thinning tree stands, species composition can be controlled, stand health and vigor improved, and windfirmness increased. Wildlife habitat is enhanced, since trees grow larger more quickly. Precommercial thinning creates more space for the remaining trees to grow, and may increase financial return (Ruth and Harris 1979). Four existing units (209 acres) have been identified for precommercial thinning. Actual acres thinned may vary as a result of site-specific examinations. Units harvested in this project would be surveyed and evaluated for precommercial thinning 20 to 25 years after harvest. Units to be thinned would be decided at that time. (See Appendix C for more information on precommercial thinning.)

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Precommercial Thinning Surveys

Surveys for precommercial thinning needs are scheduled in the Project Area for units that have previously been harvested. Table 2-2 displays planned surveys, by VCU and calendar year for which survey is scheduled. Additional acres adjacent to these harvest areas may be considered for riparian thinning projects. These are planned in riparian areas where harvest removed a portion or all of the large trees adjacent to the stream. Riparian thinning may be used in some cases to increase species diversity, and to maintain or enhance wildlife travel corridors. It may also be used to enhance and accelerate tree growth, which would provide future large woody debris input into the stream system.

Table 2-2
Precommercial Thinning Surveys of
Previously Harvested Units Within the Project Area

VCU	Total Acres	Calendar Year Survey Scheduled
2160	35	1999
2160	546	2000
2160	10	2001
2220	345	1999

Source: Beall 1996.

Enhancement Opportunities

Sale Area Improvement

The Knutson-Vandenberg Act of 1930 (K-V), as amended by the National Forest Management Act of 1976 (NFMA), allows the Forest Service to collect receipts from timber sales for Sale Area Improvement (SAI) projects. Top priority for these funds is to ensure stand regeneration. Both the Sitka and Hoonah District Rangers will prioritize subsequent projects (for example, precommercial thinning, fisheries enhancement, wildlife rehabilitation, and soil stabilization) and list them on the SAI plan. Separate NEPA analyses will be done for these projects as required. If funding for resource enhancement projects is not available from K-V receipts, these projects could be added to the regular program budget. Both Ranger Districts will develop the SAI plan after the Record of Decision is signed.

Recreation and Fisheries

The following were identified during project scoping as recreation and fisheries enhancement projects:

- Build more trails accessible from Tenakee Springs in VCUs 2200, 2210, and 2220. (Sitka Ranger District Recreation scoping, 1994.)
- Build a Forest Service cabin six to eight miles from saltwater along Indian River Road, for overnight cross-country skiing and hunting trips in VCUs 2160, 2200, and 2220. (Indian River Timber Sale public scoping, 1996).
- Continue with Forest Service proposed coho salmon stocking in the Indian River (Environmental Assessment/Decision Notice approved March 27, 1997).
- Construct a fishpass to open up an additional 8 to 10 miles of Indian River main-channel stream to coho salmon (Environmental Assessment/Decision Notice approved March 27, 1997). Construction was completed in 1999.
- Build a loop trail for hiking and cross-country skiing: use the Indian River Road to the meadow area; build a new section over the ridge behind Tenakee Springs; end the trail at the community of Tenakee Springs, in VCU 2200. (Indian River Timber Sale public scoping, 1996).

Mitigation Measures

Mitigation measures were considered and identified during the planning phase of this project. Standards, guidelines, and direction from the modified 1997 Forest Plan, the Alaska Regional Guide, applicable Forest Service manuals, and handbooks were applied in alternative development, unit boundary design, and road corridor locations for all alternatives. A brief summary of mitigation measures common to all alternatives is included in Appendix C. Analyses of project effects in Chapter 4 also include discussion of mitigation measures specific to each resource.

Specific mitigation measures were identified that reduce or eliminate adverse effects. These measures, as applied to each harvest unit and road, are identified on the respective unit and road cards. Unit cards are included in Appendix J, and road cards are in Appendix I. These cards list design considerations and provide an important mechanism for tracking project implementation. Additional implementation direction and policy for mitigation measures were provided in the *Tongass Forest Plan Implementation Clarification Papers* (USDA Forest Service 1998) and the *Implementation of Tongass Land Management Plan* memo (USDA Forest Service 1999a).

Monitoring

Monitoring is designed to determine if standards and guidelines, and resource management objectives of the Indian River Project have been met. The results are used to verify the timely implementation and effectiveness of selected mitigation and protection measures. Regardless of which alternative is selected, monitoring activities will be conducted over the course of the project. Three types of monitoring (implementation, effectiveness, and validation) were recognized in the development of the monitoring plan. The plan is fully described in Appendix C.

Implementation monitoring assesses whether a project was implemented as designed and whether or not it complies with the modified 1997 Forest Plan. Effectiveness monitoring examines the effectiveness of the project's design, including unit layouts, road location, and mitigation measures intended to maintain natural resources and their beneficial uses. Each activity is monitored separately, and the resulting data is analyzed and reported by the Forest Service. Validation monitoring is conducted at the Regional level in conjunction with research and is identified in the Forest or Regional planning process (modified 1997 Forest Plan).

Table 2-3
Summary Comparison of Planned Actions, by Alternative

	Alt. B Proposed Action	Alt. C	Alt. D	Alt. E	Alt. F
Volume, Acres, and Units					
Sawlog Volume (mbf)	19,022	22,686	18,738	19,394	30,394
Sawlog and Utility Volume (mbf)	23,550	28,283	23,441	24,274	36,597
Sawlog and Utility Volume (ccf)	48,091	57,756	48,174	49,549	74,734
Harvested Acres	1,821	1,781	1,513	1,596	2,261
Number of Harvest Units	85	79	70	77	103
Logging Systems by Acres					
Cable	327	647	505	534	679
Cable/Helicopter*	63	121	58	89	121
Helicopter	1,403	923	866	918	1,325
Shovel	28	90	84	55	136
Logging Systems by Volume (mbf)					
Cable	5,531	11,945	9,605	9,791	13,245
Cable/Helicopter*	1,250	2,317	1,067	1,788	2,015
Helicopter	16,400	12,308	11,094	11,569	18,667
Shovel	369	1,713	1,675	1,126	2,670
Harvest Method by Acres					
Clearcut w/Green Tree Retention	783	1,116	934	1,066	1,401
Overstory Removal	310	186	151	159	244
Patch Clearcut	117	167	121	85	310
Group Selection	567	150	160	129	95
Single Tree Selection	44	162	147	157	211
Harvest Method by Volume (mbf)					
Clearcut w/Green Tree Retention	15,971	22,667	18,776	19,958	28,225
Overstory Removal	3,919	2,435	1,905	2,178	4,048
Patch Clearcut	813	1,435	1,047	433	2,151
Group Selection	2,405	538	596	501	381
Single Tree Selection	442	1,208	1,117	1,204	1,792
Roads and Log Transfer Facilities					
New Road Miles	7.8	9.1	9.1	8.4	9.6
Reconstructed Miles	22.3	21.7	10.7	21.6	22.0
Temporary Road Miles	2.1	3.69	3.15	3.29	4.32
Number of LTFs	2	1	1	1	1
Bridges					
Number of Existing Bridges Replaced	22	22	15	22	22
Number of New Bridges	7	7	6	7	7
Log Transfer Facilities Location					
Sunshine Cove	1	1	0	1	0
Sunny Too	0	0	0	0	1
10-Mile Creek	1	0	1	0	0
Camp Location					
Corner Bay - land-based camp	0	0	0	1	0
Corner Bay - float camp	1	1	0	0	1
Seal Bay - float camp	1	0	1	0	0
Post Harvest Road Management Objectives					
Mainline Roads Open	Yes	Yes **	--	Yes **	Yes **
Close All Roads	--	--	Yes	--	--
Timber Economics					
Average Annual Direct/Indirect No. of Jobs (over 4 yrs.)	49	59	49	50	76
Average Annual Wages -\$ millions (over 4 yrs.)	\$2.1	\$2.5	\$2.1	\$2.2	\$3.3

* Most of unit is cable, but one or more settings are helicopter.

** Open to administrative traffic only.

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Table 2-4
Summary Comparison: Effect on Resources, by Alternative

	Alt. A Existing Condition ¹	Alt. B Proposed Action	Alt. C	Alt. D	Alt. E	Alt. F
Old-Growth % Remaining	86.6	79.6	78.7	79.7	79.1	76.2
Old-Growth Acres Remaining						
Alpine/Subalpine	539	537	537	537	537	537
Brushfields	2,144	2,115	2,106	2,107	2,061	2,098
Colluvial/Fluvial/Coastal	2,234	2,071	1,978	1,971	2,043	1,935
Forested Hills	306	281	281	281	281	281
Lowland Wetland-Forest	1,132	1,123	1,117	1,121	1,110	1,114
Moderately Steep Forested Slopes	3,840	3,476	3,444	3,626	3,453	3,298
Steep Forested Slopes	5,873	5,165	5,130	5,141	5,184	4,867
Wetlands Acres Affected						
% Affected in Harvest Units	0.5	2.0	1.6	1.3	1.9	2.7
% Affected by Roads	0.5	0.7	0.8	0.8	0.8	0.8
Wildlife Habitats: % of Habitat Affected						
Beach Fringe	-21	-22	-21	-22	-21	-21
Estuary Fringe	-2	-2	-2	-2	-2	-2
Riparian	-30	-36	-37	-37	-34	-38
Old-Growth	-10	-20	-20	-18	-18	-22
Second-Growth	+1,230	+2,519	+2,486	+2,304	+2,209	+2,814
Alpine/Subalpine	0	0	0	0	0	0
Wildlife Habitat						
% Change in Suitable Habitat						
Sitka Black-tailed Deer	-10	-15	-16	-15	-14	-17
Brown Bear	-6	-10	-10	-10	-9	-11
River Otter	-32	-39	-40	-40	-37	-41
Marten	-13	-20	-21	-20	-20	-24
Red Squirrel	-8	-17	-17	-15	-15	-19
Brown Creeper	-23	-36	-35	-33	-32	-39
Red Breasted Sapsucker	-10	-23	-23	-21	-20	-26
Hairy Woodpecker	-17	-33	-32	-29	-29	-37
Bald Eagle	-37	-45	-46	-46	-43	-48
Recreation Opportunity Spectrum						
% of Acreage on National Forest Lands						
Semi-Primitive Non-Motorized	79	49	50	53	51	46
Semi-Primitive Motorized	1	0	1	0	1	1
Roaded Modified	20	51	49	47	48	53
Recreation/Tourism Income						
Average Annual Total	\$739,250	\$726,382	\$726,382	\$739,250	\$726,382	\$726,382
Recreation/Tourism Income						
Fish/Water Quality						
Total Road Miles in Stream Buffers	6.6	7.4	7.7	7.7	7.6	7.8
Number of Stream Crossings						
Class I/II	88	110	118	116	116	119
Class III	13	19	24	22	24	25
Total	101	129	142	138	140	144
Heritage Resources						
Impacts on Historic Property	No	No	No	No	No	Yes

¹ Alternative A reflects action taken from 1956 through 1996.

Table 2-4 continued
Summary Comparison: Effect on Resources, by Alternative

	Alt. A Existing Condition ¹	Alt. B Proposed Action	Alt. C	Alt. D	Alt. E	Alt. F
Subsistence Effects: Project and (Cumulative) Effects	Significant Possibility of a Significant Restriction of Subsistence Use					
Abundance or Distribution:						
Deer	No (Yes) ²	No (Yes) ²	No (Yes) ²	No (Yes) ²	No (Yes) ²	No (Yes) ²
Brown Bear	No (No)	No (No)	No (No)	No (No)	No (No)	No (No)
Furbearers	No (No)	No (No)	No (No)	No (No)	No (No)	No (No)
Fish Resources	No (No)	No (No)	No (No)	No (No)	No (No)	No (No)
Other Resources	No (No)	No (No)	No (No)	No (No)	No (No)	No (No)
Competition:						
Deer	No (No)	No (No)	No (No)	No (No)	No (No)	No (No)
Brown Bear	No (No)	No (No)	No (No)	No (No)	No (No)	No (No)
Furbearers	No (No)	No (No)	No (No)	No (No)	No (No)	No (No)
Fish Resources	No (No)	No (No)	No (No)	No (No)	No (No)	No (No)
Other Resources	No (No)	No (No)	No (No)	No (No)	No (No)	No (No)
Access:						
Deer	No (No)	No (No)	No (No)	No (No)	No (No)	No (No)
Brown Bear	No (Yes)	No (Yes)	No (Yes)	No (Yes)	No (Yes)	No (Yes)
Furbearers	No (Yes)	No (Yes)	No (Yes)	No (Yes)	No (Yes)	No (Yes)
Fish Resources	No (No)	No (No)	No (No)	No (No)	No (No)	No (No)
Other Resources	No (No)	No (No)	No (No)	No (No)	No (No)	No (No)

¹ Alternative A reflects action taken from 1956 through 1996.

² Each column displays both project and (cumulative) potential for restrictions of subsistence use.

2 Alternatives Including the Proposed Action

NOTES

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Chapter 3

Affected Environment

Overview

This chapter documents the existing condition of resources within the Indian River Project Area that may be affected by the proposed project actions. This information is used as the baseline for measuring the effects of the alternatives discussed in Chapter 4.

In 1996, the Forest Service completed a watershed analysis report summarizing the findings of the Indian River Watershed Analysis (IRWA). The report described the natural resource condition, human features, processes, and interactions for the Indian River area. The boundaries of the watershed analysis area closely approximate the boundaries of the Project Area. While the specific purpose of the watershed analysis was to gather pertinent information helpful in addressing the issues of watershed protection, riparian conservation, and maintenance of fish habitat capability, much of the data is pertinent to this EIS as well. In certain resource discussions (for example, soils, water, and fish), the terms “watershed analysis area” and “Project Area” are used interchangeably. Information in this chapter taken from the IRWA is cited as *Paustian et al. 1996*.

Geophysical

The Indian River Project Area is located on Chichagof Island (1,436,463 acres), one of the larger islands of the Alexander Archipelago, in Southeast Alaska. Chichagof Island is 64 miles long and 60 miles wide. It is bounded on the west by the Pacific Ocean, on the north by Cross Sound and Icy Strait, on the east by Chatham Strait, and on the south by Peril Strait. (See Figure 1-1.)

Climate

The Project Area lies in the Southeast Alaska maritime climate region. Mean annual temperature is 40°F. A climate station on the outer coast of Chichagof Island receives 113 inches of precipitation annually, while Angoon on the west coast of Admiralty Island receives an average of 38 inches (Farr and Hard 1987). All the measuring stations are very close to saltwater and less than 50 feet in elevation. Precipitation at higher elevations further inland varies considerably (Farr and Hard 1987). Precipitation occurs throughout the year. Annual precipitation averaged 106 inches between 1976 and 1980 at a monitoring station located near the middle of the Indian River watershed.

Most snowfall occurs between December and March. Snowfall is highly variable in amount and persistence from year to year, especially at low elevations along the coastline. During mild winters, coastal low elevation areas may remain snow free (Martin et al. 1995).

The growing season (number of days with minimum temperature above 32°F and maximum temperature above 40°F) averages 186 days at the Sitka Airport. Average maximum temperatures during the summer growing season range from 55°F to 66°F. Daylight varies from 7 hours during the winter to about 18.5 hours during the summer. Summer daily temperature fluctuations are reduced due to long day lengths and cloud cover. Daily winter fluctuations are moderated by low sun angle and cloud cover (Martin et al. 1995).

Prominent low-pressure systems cause frequent fall and winter storms which often result in blowdown of forest stands. Prevailing wind direction is strongly influenced by local topography (Martin et al. 1995).

Landscape Ecology

The National Environmental Policy Act (NEPA) requires that areas outside the Project Area boundary which may be indirectly impacted by the project actions be included in the project environmental analysis, in addition to those areas which would be directly impacted. For the Indian River Project, this was accomplished with a landscape analysis completed for Northeast Chichagof Island (Garvey et al, in prep.). In the analysis, landscape-scale ecological processes were considered, as opposed to smaller project-level scales of analysis.

Northeast Chichagof Island Landscape Analysis

Landscape analysis assumes resource integration, emphasizing the relationships and linkages among resources. This approach focuses on processes, community structure, and composition, and views these from scales larger than the Project Area. It also applies a broad look over time, incorporating historic and future perspectives. This type of analysis over space and through time is necessary to address landscape issues such as biological diversity, forest fragmentation, and maintenance of viable wildlife populations. The analysis is based on the following central features of ecosystem management:

- Integration of resources rather than considering them separately.
- Use of a systems framework, emphasizing the relationships between community, composition, structure, and function.
- Viewing ecosystem composition, structure and function in a hierarchy of spatial and temporal scales in order to address biodiversity within habitats, between habitats, and between geographic areas (see Tables 3-1 and 3-1a).
- Developing Desired Future Conditions at multiple scales that take into consideration economic feasibility and the health, productivity, and resilience of the land over time in the face of unplanned and uncertain future events.

The Northeast Chichagof landscape analysis area (which includes the Indian River Project Area) is an ecological entity, consisting of that portion of Chichagof Island bounded on the north by Icy Strait, on the east by Chatham Strait, on the south by Tenakee Inlet, and on the west by Port Frederick. A narrow strip of land between the northwest end of Tenakee Inlet and the southern tip of Port Frederick connects it to the remaining portions of Chichagof Island. Although most of the analysis was confined to this portion of the island, linkages to the whole island are recognized, particularly with respect to wildlife population viability.

Forest ecosystems are neither discrete nor easily delineated. Ecosystems can be conceptualized as occurring in a nested geographic arrangement, with smaller ecosystems contained within larger ones (Haber 1994, Bailey 1996). Table 3-1 displays this wide range of ecological units, from global or continental geographic areas down to relatively small areas, such as the Indian River Project Area. In the past, the focus was primarily on the landtype and landtype phase levels; for the Northeast Chichagof landscape analysis, the focus is the subsection and landtype association levels. (See Appendix H and landtype association discussions later in this chapter for further explanation of concepts and terminology.)

Table 3-1
National Hierarchy of Ecological Units

Planning and Analysis Scale	Ecological Units	Purpose, Objective, and General Use	General Size Range	Land Area used in this Project
Ecoregion Global Continental Regional	Domain Division Province	Broad applicability for modeling and sampling. Strategic planning and assessment. International planning.	1,000,000's to 10,000's of square miles	Not Applicable
Subregion	Section ---- Subsection	Strategic, multi-forest, state-wide and multi-agency analysis and assessment	1,000's to 10's of square miles	Region 10 wide ---- Tongass wide
Landscape	Landtype Association	Forest or Area-wide planning, and watershed analysis	1000's to 100's of acres	Northeast Chichagof scale
Land Unit	Landtype Landtype Phase	Project and Management Area planning and analysis.	100's to less than 10 acres	Project level (for example, timber sales)

Source: USDA Forest Service 1993

Biodiversity

Biological diversity, or biodiversity, is defined as the variety of life and its processes, including the variety in genes, species, ecosystems, and the ecological processes that connect everything in ecosystems (Bourgeron et al. 1994). (See Table 3-1a.) It is defined and understood in terms of the natural and historical numbers and distributions of plants and animals, habitats and communities (USDA Forest Service 1997a). The Northeast Chichagof landscape analysis includes a biological diversity assessment of the landscape area. Such an assessment can be discussed from either a species (*fine filter*) approach or ecosystem (*coarse filter*) approach. In this biodiversity assessment, both approaches were used.

The species approach works well where the aim is to aid a known species whose survival is threatened. The ecosystem approach works well where there is inadequate knowledge about numbers and kinds of species, and relationships among them in an ecosystem. It assumes that the best approach for conserving the species is to ensure that the ecosystem continues to have the same overall composition, structure, and function (Walker 1995).

Table 3-1a
Biodiversity Components and Scales and
the 1991 TLMP SDEIS Biodiversity Elements

Component	Scale	Biodiversity Element
Composition	Landscape Types Communities Ecosystems Species Population	Ecological Provinces Plant Associations and Conditions Plant and Vertebrate Species Numbers Extinctions, Introductions, Vulnerability Species Abundance and Distribution Management Indicator Species
Structure	Landscape Patterns Habitats Genetic	Habitat Fragmentation
Function	Landscape Processes And Disturbances Land Use Trends Interspecific Actions Life Histories	Ecological Processes

Source: 1997 TLMP EIS, p. 3-13 (USDA Forest Service 1997a)

Ecosystem Approach (Coarse Filter)

To preserve ecosystem variety, the ecosystems must first be classified and mapped, so that type and extent are known. For Northeast Chichagof, the following three types of coarse filter diversity were mapped and assessed:

Landscape diversity. Landscape diversity relates to the abundance of different land type associations. (See Landscape Diversity subsection following.) Landtype associations that make up the watersheds of the analysis area are of different distributions and have been affected differently by natural and human disturbance. The landtype associations were mapped and compared among watersheds and with past harvest activity. Landtype associations are discussed further in other sections of this chapter, as well as in Appendix H. Project impacts to landtype associations are displayed by alternative in the Vegetation section in this chapter.

Structural diversity. Natural disturbance agents such as wind, disease, and landslides increase the canopy heterogeneity and age cohorts across the forested landscape. Human and natural disturbances lead to forest fragmentation, which is a concern for wildlife species. Further discussions related to structural diversity and natural disturbances are included in the Vegetation and Wildlife sections in this chapter. Project impacts to structural diversity are discussed in the Soils, Vegetation, Wildlife, and Timber sections.

Geologic Diversity. Limestone distribution and structure in this temperate humid environment create karst, which may contain cave features (both abiotic and biotic) that are uncommon or rare. With Forest Service cooperation, the USGS geology map was updated and digitized into GIS to aid in locating potential karst areas within the analysis area. See further discussions about karst in the Geology, Minerals and Caves sections in this chapter and Chapter 3.

Species Approach (Fine Filter)

A fine filter approach was used for the following known species or communities:

Plant community diversity. Forested stands with an abundance of regenerating yellow-cedar and rich calcareous fens are communities that are rare in Southeast Alaska. Hence, one cedar stand that is considered unique in the upper portion of Freshwater drainage was eliminated from consideration for timber harvest. Rich fens, one of the rarest wetland types in the Alexander Archipelago, were mapped, to facilitate avoidance in future roading. See Vegetation section in this chapter for further discussion.

Threatened, endangered, or sensitive species. Known species of reduced numbers or limited distribution (both plant and animal) were considered individually. When appropriate, surveys were completed. See Wildlife and Threatened, Endangered, and Sensitive Species sections in this chapter for discussion of project impacts. See also Biological Evaluations in Appendix B.

Salmon stock diversity. Maintenance of diverse salmon stocks is a primary concern to ensure the survival of the individual stocks throughout their range and sustainable salmon production. Hence, riparian buffers are identified to protect important habitat. See Soils, Fish and Water section in this chapter and Chapter 3 for further discussion.

Plant species diversity. Species diversity is often measured as the number of species per a given area, and numbers are compared among different areas. For the analysis area, species observed in past sampling have been tallied. See Appendices B and H for further discussion.

Individual species tallies are difficult to conduct in a large area. Consequently, data is not available which would support a complete listing of species for the Project Area or for the larger Northeast Chichagof area. Those species that may be at risk are discussed in the Threatened, Endangered, and Sensitive Species section of this EIS. See Appendix H for a partial listing of individual plant species in the landscape analysis area.

Since individual species cannot be tallied, the coarse filter approach is used in an attempt to conserve a diversity of habitats. For more information on species and plant communities on the Tongass National Forest, refer to Martin et al. 1995.

Landscape Diversity

There are 19 ecological subsections on the Northern Tongass (Brock et al. In prep.). Within the Alexander Archipelago section in Southeast Alaska, the delineating criteria for subsections are: gross topography, bedrock geology, sub-regional climate, glacial geology, general soil classifications, and potential natural vegetation.

The Northeast Chichagof subsection (from Lemesurier Island in Icy Strait south to approximately Sitkoh Bay) was delineated from the rest of Chichagof Island based on geology. This subsection is almost completely divided into three parts by bays and inlets. Northeast Chichagof proper is made up of the central portion of this subsection (see Figure 3-1). This part of Chichagof Island is on the Alexander terrane and contains more calcareous rock than other parts of the island. This area is also drier and cooler than the west side of the Archipelago. The ECOMAP classification (ECOMAP 1993) for the northeast Chichagof inventory area at the subsection level is as follows:

Domain:	Humid Temperate
Division:	Marine
Province:	Pacific Gulf Coast Forest
Section:	Alexander Archipelago
Subsection:	Northeast Chichagof

Landtype Associations

As stated above, landscape diversity has to do with the abundance of different landscape units, such as landtype associations (LTAs). LTAs are delineated based on similarities in geomorphic processes, soil complexes, stream types, wetlands, and plant associations (ECOMAP 1993). See the Vegetation section in this chapter for a brief description, and Appendix H for a full discussion of landtype associations.

The watersheds that make up the Project Area have different amounts and distributions of LTAs (Figure 3-2). The dominant LTAs are the alpine/subalpine summits and ridges, brushfields, steep forested mountain slopes, and moderately steep forested mountain slopes.

The most productive forest occurs in four LTAs: steep forested mountain slopes, moderately steep forested mountain slopes, the colluvial/fluvial/coastal surfaces, and forested hills. The lowland wetland-forest complex and the brushfield LTAs are marginal for trees because of factors such as too much soil moisture, low soil temperature and too much avalanching. The remaining two LTAs, alpine/subalpine summits and ridges and estuaries/beaches, primarily comprise non-forested communities in the Project Area (Table 3-1b).

In general, most of the higher elevation and steeper LTAs are quite abundant, while the flatter, lower-elevation LTAs are less common. The estuaries/beaches LTA is the least common. Both the estuaries/beaches and colluvial/fluvial/coastal surfaces LTAs have been affected by timber harvest in the past. Log transfer facilities have often been on or adjacent to estuaries, and alluvial fans and flood plains have been heavily harvested because they are productive for timber and easily accessible.






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Landscape diversity may be compared between the Indian River Project Area and Northeast Chichagof for a larger scale perspective. Table 3-1b compares the acres and percentages of each LTA in the Indian River area and in Northeast Chichagof as a whole. All of the LTAs are present in both areas.

Table 3-1b Landtype Association Acres and Percentages for the Indian River Project Area and the Northeast Chichagof Landscape Analysis Area				
Landtype Association (LTA)	Indian River Project Area		NE Chichagof Landscape Area	
	Acres	Percent	Acres	Percent
Alpine/Subalpine Summits and Ridges	8,225	21%	42,746	17%
Brushfields	8,795	22%	33,247	14%
Steep Forested Mountain Slopes	7,592	19%	45,121	19%
Moderately Steep Forested Mountain Slopes	6,041	15%	45,121	19%
Forested Hills	1,474	4%	11,874	5%
Colluvial/Fluvial/Coastal Surfaces	4,444	11%	18,998	8%
Lowland Wetland-Forest Complex	2,401	6%	35,622	15%
Estuaries/Beaches	298	1%	4,750	2%
Total	39,270	100%	237,478	100%
Source: Trull et al. 1997				

Figure 3-1 ECOMAP Subsections for Chichagof Island



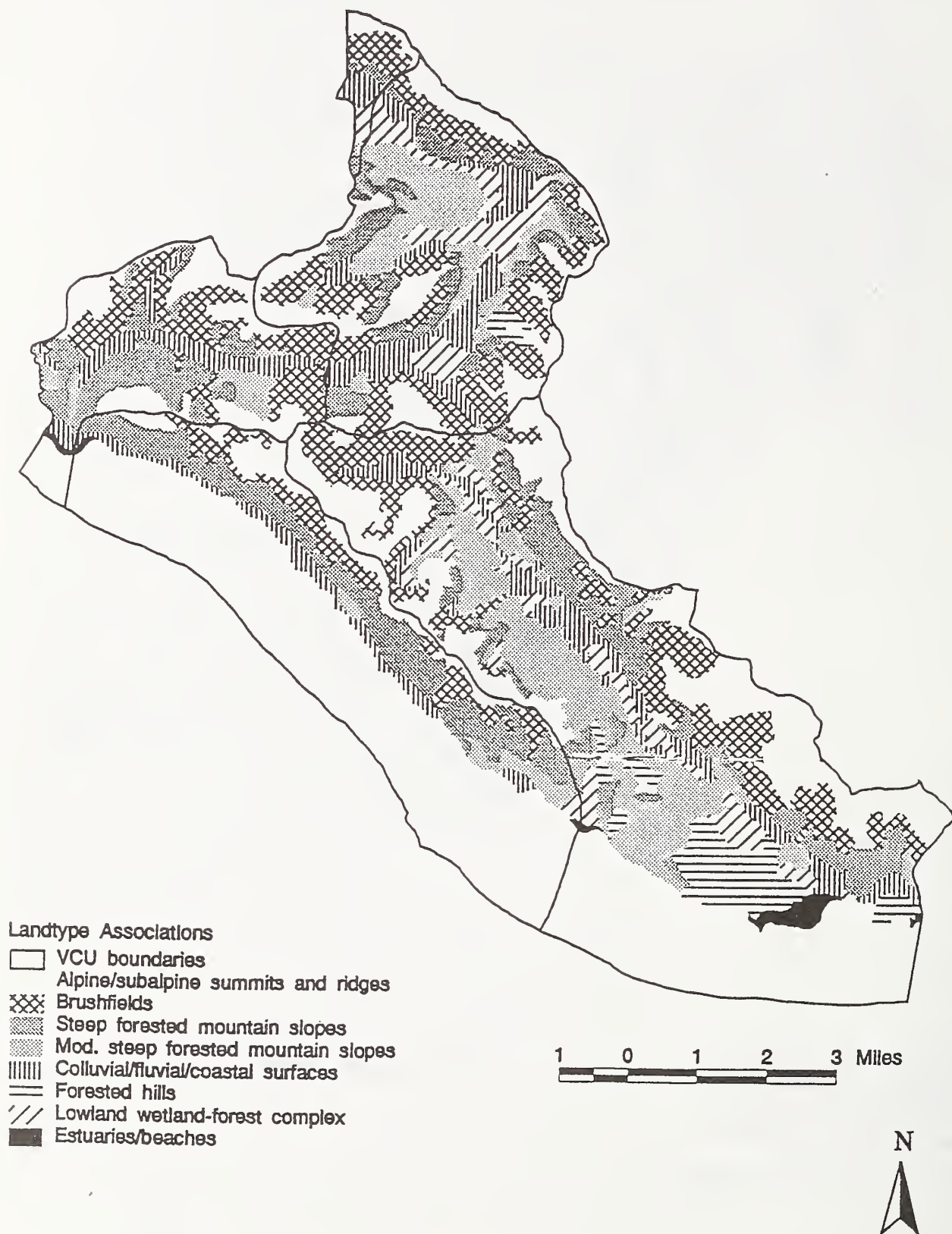
-  Chichagof shoreline
 ECOMAP Subsections
 W Chichagof-Yakobi
 Central Chichagof
 NE Chichagof
 S Chichagof-N Baranof

10 0 10 20 Miles




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Figure 3-2 Landtype Associations of the Indian River Analysis Area



Geology, Minerals, and Caves

Geology

Southeast Alaska is comprised of three major metamorphic rock complexes. The Indian River Project Area is entirely in the Glacier Bay-Chichagof plutonic-metamorphic complex. Major northwest trending faults define Tenakee Inlet, Indian River, and Freshwater Bay.

Mining/Mineral Potential

Mineral resources are legally divided into three categories: locatable minerals, leasable minerals, and salable minerals. Forest Service authority to manage and regulate activities associated with each type of mineral varies with each category.

Locatable minerals are identified under the United States Mining laws (as amended), and include minerals such as gold, silver, lead, zinc, and molybdenum. The Project Area does not have an active mining history. Bureau of Land Management records show that no active mining claims are located within the area. A potential exists in the area for skarn-type mineral deposits associated with granitic intrusions in carbonate rocks (Karl 1995).

Leasable minerals include federally owned oil, gas, potassium, coal, phosphate, sulfur, hot springs, and hardrock minerals. There are no known leasable minerals on National Forest System land in the Project Area. Eighteen hot springs are located within the Project Area; however, none are located on National Forest System land.

Salable minerals, also known as common variety minerals, include deposits of sand, gravel, rock, stone, clay, and other similar materials. There are numerous deposits that could be developed within the Project Area for common uses. The primary use of these minerals in the past has been for road and facility construction associated with timber sales.

Caves

The Federal Cave Resources Protection Act of 1988 (FCRPA) defines a cave as “any naturally occurring void, cavity, recess, or system of interconnected passages which occurs beneath the surface of the earth or within a cliff or ledge and which is large enough to permit an individual to enter, whether or not the entrance is naturally formed or man-made. Such term shall include any natural pit, sinkhole, or other feature which is an extension of the entrance.”

The FCRPA requires that significant caves located on Federal lands be preserved and protected for the perpetual use, enjoyment, and benefit of all people. One cave in the Indian River Project Area has been designated as significant. To ensure its protection, information concerning its specific location will not be made available to the public (36 CFR, Part 290).

Karst Vulnerability

Cave resources generally occur in areas of karst topography/limestones. Karst is a comprehensive term that applies to the unique topography, surface and subsurface drainage systems, and subsurface landforms that can develop in areas of soluble rock such as limestone or marble.

Karst landscapes support unique ecosystems that include mature, well developed spruce and hemlock forests along valley floors and lower slopes, increased productivity for plant and animal communities, well developed subsurface drainage, and the underlying unique cave resources (modified 1997 Forest Plan, USDA Forest Service 1997). Karst landscapes are managed as an ecological unit to protect cave resources.

The modified 1997 Forest Plan includes Forest-wide standards and guidelines for the management of karst resources. These include a requirement that karst resources be

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evaluated as to their vulnerability or sensitivity to land uses affecting karst systems. The Forest Service contracted a geology consultant, Harza Northwest, Inc., to conduct an inventory of karst resources on the Indian River Project Area, and to assess the vulnerability of these resources relative to the affects of timber harvest and related activities (Harza Northwest, Inc. 1996).

Karst vulnerability is determined by a process referred to as vulnerability mapping. The process is similar to hazard area mapping, or risk assessment. It is based on the fact that some parts of a karst landscape are potentially subject to greater resource damage and groundwater contamination risk than others. Criteria used to define critical areas are geology, elevation, slopes, karst development, and hydrology.

Karstlands are classified as having low, moderate, or high vulnerability for resource damage or contamination. The modified 1997 Forest Plan provides specific karst management objectives and appropriate land uses for each classification. Areas of high vulnerability are those that have the highest resource value and that are most sensitive to adverse impacts from management activities. Karst lands found to be of high vulnerability are removed from the commercial forest lands suitable land base. Forest Service GIS specialists further refined Harza's mapping to improve the map's display of high vulnerability karst areas. Some small segments of existing roads are in areas mapped as high vulnerability karst.

Vulnerability Assessment Findings. The assessment by Harza Northwest, Inc. showed that karst development in the Project Area is mostly low to moderate below the subalpine, and moderate to high above the subalpine. Well-developed karst features are best exposed in alpine areas above 1,800 feet, where erosive and depositional effects of glaciation have had the least effect. This is above the upper limit of most commercial forest land.

The final vulnerability analysis identifies 13,018 acres of karstland on National Forest land within the Project Area. Excluding upland, non-carbonate-contributing watersheds, approximately 269 acres of this karst are classified as low vulnerability, 4,604 acres are classified as moderate vulnerability, and 5,051 acres are classified as high vulnerability. Within the high vulnerability classification, approximately 4,102 acres (81 percent) are located in the alpine and subalpine zones at elevations greater than 1,800 feet. (See Table 3-2.)

Table 3-2
Karst Vulnerability in the Indian River Project Area
as Assessed by Harza Northwest, Inc. (Acres)

	Low Karst Vulnerability	Medium Karst Vulnerability	High Karst Vulnerability	Total Acreage
Total Acreage within the Harza Northwest, Inc. Contract Area				45,583
Areas underlain by limestone and marble*				11,092
Total vulnerability excluding private lands	269	6,520	6,229	13,018
Total vulnerability excluding private lands and upland contributing watersheds	269	4,604	5,051	9,924
Total vulnerability excluding private lands, upland contributing watersheds, and elevation >1,800 feet	269	4,604	949	5,822

Source: Harza Northwest, Inc. 1996

* The modified 1997 Forest Plan standards and guidelines direct that all lands underlain by carbonate rocks within the Forest should be considered a karst landscape. The recommended vulnerability mapping applies only to carbonate rock areas and areas that contribute waters to such areas.

Soils, Fish and Water

Soils

Soils in the Project Area are found on a variety of terrains shaped by glaciation and characterized by mountains and U-shaped valleys. Generally shallow soils have formed in bedrock on the mountain and hill slopes. Glacial till of variable thickness occurs along the hill slopes to an elevation of about 1,000 feet above sea level. In the valley bottoms, soils have formed in riverine deposits, glacial outwash, and marine sediments. The cool, wet climate in the area causes organic matter to decompose slowly, creating soils characterized by organic surface layers.

Limestone occurs in a significant portion of the Project Area, and influences the soils formed in it. These soils are typically not very acidic, high in nutrients and, therefore, quite productive.

Landslides

In geologic time scales, tectonic and glacial processes have probably exerted the most profound effect on the topography and soils of the Project Area. Since the Wisconsin glaciation (ending 12,000 years ago), however, erosion has also been a major factor. Many colluvial and alluvial fans were deposited on the valley floors during this time. This process is continuing, as suggested by current landsliding within the area. A landslide inventory completed in 1996 shows the distribution, type, and frequency of landslides. The inventory includes all debris avalanches and debris flows greater than 0.5 acres (Paustian et al. 1996). Table 3-3 displays the number and acres of landslides in each watershed in the Project Area. According to the inventory, 86 percent of the landslide acres occur in alpine areas, while 14 percent occur in forested areas. The slides in alpine areas are more frequent and, on average, larger.

Table 3-3
Number and Acres of Landslides in Project Area Watersheds

Watershed	Number of Landslides			Acres of Landslides		
	Alpine	Forested	Total	Alpine	Forested	Total
Game Creek	0	0	0	0.0	0.0	0.0
Indian River	19	10	29	35.2	5.6	40.8
Freshwater Creek	16	8	24	25.4	6.4	31.8
10-Mile Creek	10	7	17	20.4	0.9	21.3
Total	45	25	70	81.0	12.9	93.9

Source: Paustian et al. 1996.

Table 3-4 further breaks down the frequency of landslides on forested land by past management activities (clearcut versus uncut), for each watershed. While no slides occurred in existing clearcuts in the Indian River watershed, several did occur in the 10-Mile and Upper Freshwater watersheds. Within the forested areas of these two watersheds, only 27 percent of the slides were in uncut areas while 73 percent occurred in clearcut areas. However, 88 percent of the acres of slides in forested areas happened in the uncut areas while only 12 percent happened in the clearcut areas. This indicates that slides in clearcuts are more frequent, but smaller than slides in uncut areas.

This agrees with the study by Swanston and Marion (1991) which found that the rate of landslides in clearcuts in Southeast Alaska increased by 3.5 times, but that the slides, on average, were smaller. All the slides in clearcuts have occurred high in existing units or on

extremely steep slopes. All but two of these slides have occurred in sediment source areas (see Glossary) or along Class III drainages (Paustian et al. 1996).

Table 3-4
Number and Acres of Landslides in Project Area Watersheds in Forested Uncut Versus Forested Clearcut Areas

Watershed	Number of Landslides			Acres of Landslides		
	Forested uncut	Forested clearcut	Total	Forested uncut	Forested clearcut	Total
Game Creek	0	0	0	0.0	0.0	0.0
Indian River	10	0	10	5.6	0.0	5.6
Freshwater Creek	3	5	8	6.2	0.3	6.4
10-Mile Creek	1	6	7	0.2	0.6	0.9
Total	14	11	25	12.0	0.9	12.9

Source: Paustian et al. 1996.

Sediment Production from Landslides

Alpine slides are the dominant source of sediment in the Project Area watersheds. The highest concentration of large landslides occurs in the divide between the Freshwater Creek and 10-Mile Creek watersheds, where extremely steep alpine summits and soft, low-grade metamorphic rock create unstable conditions. Because the bedrock is soft, these slides are deep and produce large volumes of sediment. In addition, most of the alpine landslides begin in the upper ends or along the sides of headwater stream channels, where sediment can be transported to main stem channels.

All of the slides in clearcuts in the 10-Mile Creek watershed reach intermittent streams. However, very little of the resulting sediment reaches main stem channels. Either the intermittent channel does not have enough energy to move the sediment, or the road prism has trapped it. In the Freshwater Creek watershed, a similar situation exists. Of the five slides in clearcuts, three reach intermittent drainages, but nearly all the sediment remains in the channel or stored behind the road prism. Little sediment-filtering capacity remains in some of these drainages. Sediment from additional failures could reach the main stem channels.

Surface Erosion

Forest roads are the primary source of surface erosion not associated with areas bared by landslides. Surface erosion from roadbeds, drainage ditches, and cut- and fill-slopes can be a major source of sediment delivered to streams (Paustian et al. 1996). Table 3-5 shows road density and drainage structures in each watershed in the Project Area.

Table 3-5
Existing Roads and Numbers of Drainage Structures by Watershed

Watershed	Road Length (mi)	Road Density (mi/mi ²)	Number of Drainage Structures ¹
Game Creek	0.0	0.0	0
Indian River	12.5	0.45	108
Freshwater Creek	7.2	0.44	55
10-Mile Creek	3.5	0.42	77
Total	23.2	0.38	240

Source: Kelliher. 1996.

¹Drainage structures were only counted along main roads. Nearly all structures along spur roads have been removed.

Watershed analysis data show few areas with surface erosion problems (Paustian et al. 1996). Most of the roads are in the valley bottoms or along foot slopes, reducing the amount of cut- and fill-slopes. Road #7500 climbs out of the Indian River drainage and Freshwater Creek drainage, and is the only significant section of road that crosses mountain

slopes. This section of road is well constructed. Cut banks and fill slopes have revegetated in many places, leaving little bare ground.

The road surface throughout the watershed analysis area consists of competent rock overlay that is highly resistant to breakdown and erosion, thus reducing sediment production. However, some drainage structures have failed or are in poor condition, and some road prism erosion has occurred within each watershed. (See Table 3-6.) The number of erosion sites is highest in the 10-Mile Creek watershed, where the road crosses the bases of steep and unstable alluvial fans. Moving bedload in these alluvial fan channels has plugged culverts and caused washouts on Road #7502.

**Table 3-6
Condition of Drainage Structures, and
Number of Sites With Road Prism Erosion**

Watershed	Drainage Structure Condition (Percent by Condition Class)				Number of road sites with erosion (washout)
	Failed * (more than 80% blocked)	Poor * (50-80% blocked)	Fair * (25-50% blocked)	Good * (less than 25% blocked)	
Game Cr.	0	0	0	0	0
Indian River **	6	8	12	74	6
Freshwater Cr.	2	11	27	70	6
10-Mile Cr.	8	6	14	73	9

Source: Paustian et al. 1996.

* Figures in these columns are percentages of total drainage structures within each watershed.

** Note: Some of these problems were corrected in June 1999. Additional or larger pipes were installed, as well as two new bridges.

Sediment Production from Surface Erosion

Sediment delivery from surface erosion is controlled by the nearness of roads to alluvial fans and flood plains, the frequency of stream crossings, and road drainage design. Sediment from these erosion sites may reach the main stem stream. The amount of sediment produced by road prism erosion is extremely small when compared to the amount produced by natural landslides. In the Indian River and Freshwater Creek watersheds, the existing roads are not close to main stem channels; this creates a large buffer area in which to trap sediment.

Surface erosion from previous harvest units is minimal. Immediately after logging, bare ground may have been present in units. In the time since harvest, however, vegetation has stabilized most of the ground, protecting it from further surface erosion.

Water

The Project Area, located within the coastal rain forest of Southeast Alaska, is characterized by an abundance of water. A dominant maritime climate annually produces heavy precipitation, resulting in the formation of many rivers, streams, lakes, ponds, and wetlands. These abundant water systems provide spawning and rearing habitat for salmon and resident fish -- aquatic resources important to sport, commercial, and subsistence users of the area.

Stream Flow

Streamflow regimes for Indian River, Freshwater Creek, and 10-Mile Creek are typical of island watersheds in Southeast Alaska. Runoff responds directly to rainfall, except for a smaller peak in late spring during snow melt. Streamflow records for the Indian River watershed are limited to an eight-year record for the upper area (13 sq. mi.) of the watershed (1972 to 1985). Unit runoff estimates range from 15 to 17 cubic feet per second per square mile (cfs/sq. mi.) in October, to 5 to 6 cfs/sq. mi. in August (Paustian et al. 1996). No flow records exist for either Freshwater Creek or 10-Mile Creek. Since these three watersheds have similar proportions of timber harvest and roads, the Indian River analysis results can be extrapolated to some degree to the 10-Mile Creek and Freshwater Creek watersheds.

Indian River. Indian River is the largest watershed in the Project Area. The basin has an elongated, narrow shape with a steep mountain ridge forming the north side slope. A lower, moderately sloped ridge forms the south side slope, and a broad alluvial flatland occupies the valley bottom. The basin has a classic U-shaped cross-sectional profile. Indian River has the most area in wetlands and flood plain landforms, which tends to increase rainfall/runoff absorption and retard streamflow response times. Karst geology on the north slope also affects flow routing from alpine headwater catchments through runoff storage.

Upper Freshwater Creek. This basin is second largest of the three major watersheds. The overall basin pattern is semicircular, with three wedge-shaped sub-basins converging flow to a central main stem. The main stem flows through a deep bedrock gorge before joining the North Fork Freshwater Creek at the estuary. Two northern sub-basins are elongated with V-shaped valley cross-sectional profiles. The southern sub-basin has a broader valley bottom. No stream flow measurements are available for Freshwater Creek. However, due to similar rainfall levels, seasonal and event runoff patterns should closely mirror Indian River.

10-Mile Creek. The 10-Mile Creek watershed is the smallest, and the main stem channel is the shortest, in the Project Area. The valley profile is steep and V-shaped. Due to the steep basin relief and short main stem length, this basin has the quickest response to storm runoff and is the most efficient in routing runoff to the main stem channel. Unit area runoff is estimated to be higher than the other watersheds due to structural characteristics.

Game Creek. A small portion (750 acres) of the Game Creek drainage is also located in the Project Area. The overall basin is broad and gently sloped, with stream runoff flowing into alluvial flatlands in the valley bottom.

Peak and Low Flows

Seasonal low flows and peak flows can affect stream channel migration, channel conditions, water quality and egg survival for salmonids (Paustian et al. 1996).

Rain-on-snow peak flow events have the greatest susceptibility to change as the result of timber harvest in Southeast Alaska watersheds. Areas with shallow winter snow pack and large canopy openings such as clearcut units are the most important source zones for rain-on-snow floods (Paustian et al. 1996). The Indian River Watershed Analysis showed no significant difference between pre- and post-harvest winter peak and summer low flows. The analysis showed that winter rain-on-snow flood events are infrequent in the area and that major peak flows are primarily associated with September or October rainfall events.

August is considered a critical period for summer low flows in the analysis area, due to warm temperatures and little or no precipitation. Alpine snowpack runoff contributions to base streamflow are small at that time, and adult salmon migration also begins.

Water Quality

Temperature, dissolved oxygen, acidity, turbidity, and total dissolved solids are the parameters adopted by the State of Alaska as standards for assessing surface water quality. In general, water quality within the Project Area is good. Stream chemical components appear similar to pristine conditions, and water temperatures for all drainages are within standards established for the propagation and growth of fish.

Sediment data collected from Indian River between 1977 and 1981 indicate that past timber harvest activities had no measurable effect on turbidity or fine sediment concentrations in the river. Subsequent observations of erosion sources in the Indian River, 10-Mile Creek, and Freshwater Creek watersheds show that general turbidity and fine sediment levels have met and currently meet State water quality standards. Possible exceptions to this general observation include localized, short-term sedimentation associated with construction of road drainage structures, minor road washouts, and some small scale mass wasting events within harvest units.

Removal of riparian canopy can have a short-term beneficial effect on juvenile salmon; higher temperatures associated with the resulting increased sunlight can increase juvenile production and growth rates. Over the long term, however, subsequent alder and second-growth conifer regeneration can have detrimental effects in small rearing channels. Increased canopy closure can diminish sunlight, create colder stream temperatures, decrease food supply, and thereby reduce juvenile growth rates. Stream temperature data from Indian River indicate that State of Alaska stream temperature standards are currently being met in the Project Area (Paustian et al. 1996). According to the data, summer stream temperatures may have increased up to six degrees Fahrenheit in some tributaries and portions of main stem channels where the adjacent riparian timber has been clearcut.

The proportion of clearcut harvest along streams in the Project Area can be used as a relative index of cumulative sunlight and temperature changes associated with second-growth riparian stand development. Miles of clearcut harvest by stream class, process group, and watershed for the analysis area are summarized in the Indian River Watershed Analysis (IRWA, pp. 77-78). Based on this riparian harvest index, 10-Mile Creek and Indian River are unlikely to experience major stream temperature changes in the future. Indian River also has a large fen wetland riparian component that will act as a buffer to effects of riparian harvest on some forested channels. The Freshwater Creek basin has the greatest chance of cumulative temperature change due to a high percentage (3.3 miles or 16 percent) of main stream or valley bottom stream channels having been harvested.

Fish and Fish Habitat

Stream Habitat Condition

In 1989 and 1995, stream surveys to determine habitat condition were completed on segments of the Indian River, 10-Mile Creek, and Freshwater Creek (Paustian 1996). The stream survey data were used to determine variability within a watershed, and to compare with Regional Fish Habitat Objectives specifying desired physical and biological conditions for fish habitat in Southeast Alaska. Data collected in the surveys included:

- amount and size of large woody debris (LWD);
- number, type, and size of pools;
- number and size of riffles and glides;
- amount of off-channel and secondary channels;
- average and maximum depth of pools;
- dominant substrate size; and
- undercut bank area.

The data shows most of the streams in the analysis area to be in a near pristine condition. Although past harvest activities have affected some key riparian areas and wetlands, the overall abundance of pools, pool area, and LWD indicate healthy and productive streams.

Stream Classes, Habitat Distribution, and Use

Class I streams have anadromous or adfluvial fish habitat. This can include habitat upstream of existing barrier falls, if the habitat can be enhanced by such techniques as fish pass construction or juvenile salmon stocking. Class II streams contain resident fish populations with limited sport fishery value. Class III streams contain no fish but have potential water quality influence on downstream aquatic habitats. Table 3-7 shows the stream class distribution for the watersheds within the Project Area.

Table 3-7
Stream Miles by Stream Class

VCU	Class I	Class II	Class III
Game Creek	0.5	1.1	2.1
Freshwater Creek	17.4	24.3	34.5
Indian River	36.2	27.8	60.9
10-Mile Creek	5.2	6.2	25.5
Total	59.3	59.4	123.0

Source: Paustian et al. 1996.

Anadromous fish species within the Project Area include pink, chum, coho, and chinook salmon, steelhead, and Dolly Varden char. Resident game species are cutthroat and rainbow trout, and Dolly Varden. Most critical Class I stream habitat for anadromous and resident fish is in the estuary, flood plain, and low-gradient contained channels. Where accessible, these low-gradient channels provide much of the available spawning habitat for all fish species present in the Indian River Project Area. These channels, along with associated secondary channels and smaller flood plain channels, provide rearing habitat for juvenile coho salmon, steelhead and cutthroat trout, and Dolly Varden.

Palustrine channels, sloughs, and associated beaver ponds are abundant in the Indian River watershed. A few palustrine channels occur in the Freshwater Creek watershed. Primarily associated with fens, palustrine channels and beaver pond areas are characterized by organic sediments, abundant deep pool and glide areas with cover, and spring-fed tributaries. These channels and ponds provide high quality rearing and limited spawning habitat for coho salmon, Dolly Varden, and cutthroat trout.

All fish species also use the accessible habitat in the moderate gradient channels. These channels contain low to moderate amounts of spawning and rearing habitat. Stronger swimming coho salmon, cutthroat trout, and Dolly Varden use this habitat the most.

All three major watersheds in the Project Area have waterfalls on their main channels, which either exclude all anadromous fish (Freshwater Creek) or substantially reduce the habitat accessible to anadromous fish (Indian River and 10-Mile Creek).

Previous Impacts to Fish Habitat

Wind Disturbance. Blowdown is a natural process in the Project Area, and occurs at disturbance levels ranging from a single tree to an area covering many acres. Windthrow along stream riparian areas is a primary source for instream large woody debris (LWD), which maintains and creates fish habitat. However, management activities such as clearcuts and roads next to stream riparian areas can greatly increase the rate of blowdown along a stream and negatively impact future stream habitat condition. Wind disturbances associated with recent timber harvest are present in all three watersheds. Results of an aerial survey (July 1995) show that blowdown has occurred adjacent to 60 percent of the harvest units and in several riparian buffer strips (Trull et al. 1997).

Previous Timber Harvest. Effects of timber harvest on channel morphology and habitat from accelerated mass wasting can have serious long-term impacts to stream productivity (Paustian et al. 1996). Effects of mass wasting generated from past harvest in the Project Area were evaluated using estimates of annual total sediment loads (width-to-depth ratio, and riffle stability index).¹ Data collected for Indian River and Freshwater Creek indicate that the reaches are presently stable, but are approaching a threshold where they may respond negatively to increased sediment loads. The data for 10-Mile Creek indicate its stable condition is unlikely to change unless a massive increase in sediment occurs.

There are 64.0 miles of Class I and II stream segments in the Indian River watershed. Timber harvesting to the edge of one or both stream banks occurred prior to the Tongass Timber Reform Act (TTRA) along 5.7 miles (9 percent) of these segments. This included isolated segments of the main stem floodplain channel. Approximately 1.3 miles (2 percent) of high-gradient Class III stream segments were harvested to the stream banks.

There are 47 miles of Class I and II stream segments in the Freshwater Creek watershed. Timber harvesting to stream banks occurred on 7.0 miles (15 percent) of these stream segments. Timber harvest has occurred along 0.8 mile (2 percent) of high-gradient Class III channel segments in this watershed. The survey data indicate a healthy stream habitat condition. However, this healthy condition will decline as existing instream LWD and stumps along stream banks decompose and wash out of the system.

There are 11.4 miles of Class I and II stream segments in the 10-Mile Creek watershed. Streamside harvesting in 10-Mile Creek was restricted to 2.8 miles (25 percent) along these segments. Harvest occurred along one mile (4 percent) of high-gradient Class III channels. Several steeper alluvial fans and V-notches were harvested. Many of these channels are unstable and prone to mass movement failures. This poses a threat to stream habitat, although the moderate gradient main channel has a high sediment transport capability.

¹ The modified Forest Plan established baseline fish habitat objectives designed to sustain the diversity and production of fish. These objectives, which are based on an inventory of all Tongass National Forest streams, were used to evaluate key streams in the Project Area. Channel structure and riffle stability data were collected for several response reaches in the Project Area. (Response reaches are stream sections that are sediment-sensitive and quickly reflect upstream changes in sediment loads.) Changes in width-to-depth ratios in these reaches were derived from a comparison with stream channel types identified in the Forest-wide inventory as being key to the relative health of fish habitat.

Table 3-8
Stream Riparian Area Influenced by Existing Roads and Harvest Units

	Indian River	Freshwater Creek	10-Mile Creek
Total riparian area acres	2,278	2,009	785
Road acres in riparian area	21	15	6.7
Harvest unit acres in riparian area	120	162	59
Total managed acres*	141	177	66
% total riparian area influenced	6%	9%	8%

Source: Paustian et al. 1996

*Road acres + harvest unit acres

Existing Roads. Road corridors through riparian areas can potentially impact aquatic resources. However, existing road corridors in the Project Area generally avoid core wetland and stream riparian areas. The current road system also stays away from major sediment source areas in the three major watersheds. (See Table 3-8.)

Most roads are located in valley bottoms and lower valley sideslopes; therefore, potential sediment sources from road cutslopes and embankments are limited. Much of the Project Area is accessed by a logging road that begins east of the mouth of Indian River and continues along the river's east side, beyond the upstream end of the watershed. This road continues over the pass to the Freshwater Creek and 10-Mile Creek watersheds. The road parallels the upstream half of the 10-Mile Creek watershed, and another fork of the road parallels Freshwater Creek.

An inventory of drainage structures on the entire road system within the Project Area was completed in the summer of 1994 (Paustian et al. 1996), and repeated in the summer of 1995. These data provide information on existing fish pass barriers, impacts from beaver activity, sediment source areas, and general trends in the Project Area (see Table 3-9).

Table 3-9
Stream Class I and II Drainage Structures that are Fish Passage Barriers or are Affected by Beaver Activity (includes road washout sites)

Watershed	Class I Streams		Class II Streams		Washout Sites	Beaver Impacted	Fish Passage Barriers
	Culverts	Bridges	Culverts	Bridges			
Game Creek	0	0	0	0	0	0	0
Indian River	16	5	3	2	* 6	* 9	* 7
Upper Freshwater	11	6	4	0	6	0	4
10-Mile Creek	2	7	3	3	9	0	0
Total	30	17	10	5	21	9	11

Source: Paustian et al. 1996.

* Note: Most of these problems were repaired or eliminated during maintenance work completed in June 1999.

Fish Enhancement

Extensive low gradient, floodplain streams and adjacent beaver ponds upstream of the barrier falls at Indian River now provide high quality rearing habitat for salmonids. This habitat was recognized as a potential fishery enhancement site in the early 1980s. The Forest Service and Alaska Department of Fish and Game (ADF&G) cooperated to initially stock 50,000 chinook salmon fry into the floodplain section of Indian River in 1986. Chinook salmon fry were stocked into Indian River again in 1988 and 1993. The 1986 and 1988 stockings were extensively monitored as part of a research project (Killinger 1994). Monitoring during and after chinook salmon rearing in the stream did not show impacts on the resident Dolly Varden population. Dolly Varden are predominantly bottom feeders, while rearing juvenile chinook feed mostly in the middle to surface area of the water column. Approximately 100 chinook salmon survived to an adult life stage from the 1986 and 1988 stockings. The 1993 stocking began producing adult chinook salmon in 1997.

In 1999, the Forest Service completed construction of a fishpass at the Indian River barrier falls to open up 8 to 10 miles of main-channel stream to coho salmon.

Recreational Fisheries

High-value recreational fishing opportunities are found both in and adjacent to the Project Area. Although the majority of the sport fishing occurs in the saltwater (especially in the Tenakee Inlet area), freshwater fishing also occurs. The majority of the freshwater sport fishing occurs in the lower portion of Indian River (below the barrier waterfall), and in the lower end of 10-Mile Creek. Indian River is accessed from Tenakee Springs by the East Tenakee trail. The sport fishery portion of 10-Mile Creek is accessed by boat. The Project Area portion of Freshwater Creek is located upstream of barrier waterfalls. It has no anadromous fish and no resident fish large enough to attract anglers. However, this basin does influence water quality and flows that directly influence key downstream anadromous fish habitat outside the Project Area.

The Alaska Department of Fish and Game (ADF&G) gives the Indian River and Freshwater watersheds the highest qualitative rating for commercial and sport fish values. Indian River escapement records from 1964 to 1994 show annual pink salmon escapement counts up to 46,000, with an average of about 7,800. Annual chum salmon escapements are as high as 4,500, with an average of about 450 (ADF&G 1994). Indian River also produces coho salmon, Dolly Varden, and steelhead trout (Paustian, et al. 1996). As mentioned above, juvenile chinook salmon have been stocked three times (1986, 1988, and 1993) in the abundant habitat upstream of the barrier falls at Indian River. Adult chinook returning from these stockings have been available for recreational fishing both in saltwater and in the lower Indian River. The upstream area and ponds have a resident population of Dolly Varden, some of which are large enough for sportfishers.

3 Affected Environment

Recreational Fisheries Economics. According to the most recent Southeast Alaska Sport Fishing Economic Study (Jones & Stokes Associates, Inc. 1991), sport fishers in the nearby Sitka Harvest Area spent an estimated \$10.7 million in 1988 fishing for chinook salmon, coho salmon, and halibut. In Southeast Alaska, chinook salmon generated the most spending by both resident and non-resident anglers of all species sought. Residents spent more to catch coho salmon than they did to catch halibut, while non-residents spent more to catch halibut than coho salmon.

Sport fishers who fished in Southeast Alaska purchased goods and services from a variety of businesses. Spending at these sources directly supported the equivalent of 657 full time jobs in 1988. The multiplier effect of these purchases resulted in the equivalent of 950 full-time jobs, having an earnings value of \$22.5 million. Associated revenues generated from sportfishing include local sales tax, State fishing licenses, and corporate income taxes. Besides generating income, fishing in the inlets, bays, and streams of the Project Area is important to the quality of life of many Southeast Alaska residents and non-residents.

Vegetation

Within the Project Area, mountain hemlock, heath, and alpine meadow communities occur at high elevations. Sitka alder and salmonberry dominate on steep brush fields. Beside and below the brush fields are highly productive, forested slopes. On valley bottoms, wetlands are common. One wetland type is rich fens, or areas of sedge peat accumulation. Also common is a shore pine/crowberry community. On gently sloping landforms, open mixed conifer/blueberry and mixed conifer/ blueberry/skunk cabbage communities are dominant. Near large streams, where drainage is better, highly productive Sitka spruce stands dominate.

Vegetation by Landtype Association

Following are descriptions of Project Area vegetation, grouped by landtype association (LTA). (See Landscape Ecology in this chapter, and Appendix H for a detailed discussion of LTAs. Appendix H also includes a reference list of common and scientific plant names.)

Alpine and Subalpine Summits and Ridges

These summits and ridges generally have extensive areas of heath plant community types. Crowberry, luetkea, mertens mountain heather, and deer cabbage are common species. Where soil has developed, these slopes have rich plant diversity. Mountain hemlock, with minor amounts of Sitka spruce, occurs in protected areas as a dwarf forest called krummholz. Tall blueberry and copperbush are scattered among the trees. Alpine meadows, rock outcrop, and fellfield communities also occur.

Brushfields

Sitka alder and salmonberry dominate brushfields. Other common species include lady fern, Sitka willow, stink currant, and false hellebore. Inclusions of subalpine meadows and krummholz mountain hemlock communities also occur. In some areas, Sitka spruce is slowly invading the brushfields.

Steep Forested Mountain Slopes

The dominant overstory species are Sitka spruce, mountain hemlock, and western hemlock. Devil's club, blueberry, and copperbush are the primary tall shrubs. There are also open stands of mountain hemlock at higher elevations. On benches of broken slopes, mixed conifer open forest and nonforested wetland areas occur as inclusions.

Moderately Steep Forested Mountain Slopes

The dominant overstory species are western hemlock, Sitka spruce, and yellow-cedar. A wide variety of plant associations from the western hemlock, western hemlock-yellow-cedar, and mixed conifer series occurs on this association. Devil's club and blueberry are the dominant tall shrubs. Bench inclusions may have mixed conifer open forest or nonforested wetland vegetation.

Forested Hills

The forests are moderately to marginally productive for timber. Two common plant associations are western hemlock/blueberry and mixed conifer/blueberry. The vegetation mosaic is slowly changing as sphagnum moss and other wetland species invade some areas. Skunk cabbage is common in the wetter areas.

Colluvial/Fluvial/Coastal Surfaces

On frequently disturbed floodplains and fans, the vegetation is composed of a wide to narrow band of red alder, Sitka alder, and salmonberry. Black cottonwood occurs in some areas. Highly productive Sitka spruce and western hemlock forests dominate the raised alluvial terraces above the yearly floodplain communities and the uplifted beaches and rock headlands.

Lowland Wetland-Forest Complex

Bogs (muskegs) are common, where peat moss and sedge peat have accumulated and filled in small depressions and flats. They are primarily dominated by shore pine/sedge and tufted clubrush/peatmoss community types. Where drainage is better, as along small stream channels, a shore pine or mixed conifer forested wetland occurs. Rich fens occur where waters are calcium-rich, such as in the lower Indian River watershed.

Estuaries/Beaches

On the upper tidal flats, lyngbyei sedge, alkali grass, and other salt-tolerant species dominate. Adjacent to estuaries, in the supratidal meadows, bluejoint, cow parsnip, and Sitka sedge are common species.

Old-Growth Forests

In the northern Tongass National Forest, old-growth forests have been classified into six different series based on tree species (Martin et al. 1995): Western Hemlock, Western Hemlock-Yellow-cedar, Sitka Spruce, Mountain Hemlock, Mixed Conifer, and Shore Pine. Most timber harvest has occurred in the productive old-growth below 800 feet in elevation. Harvest activity on Northeast Chichagof Island began in earnest in 1956. Since then, over 23,500 acres have been harvested, which represents about 14 percent of the productive forest on the island. (See Wildlife and Timber sections in this chapter for further discussion of old-growth forests in the Project Area.)

Table 3-10 displays productive old-growth forest acres as of 1997 for each of the landtype associations in the Project Area.

Table 3-10
Acres of Productive Old-Growth Forest in 1997 by Landtype Association

Landtype Association	Project Area	VCU 2041	VCU 2160	VCU 2200	VCU 2210	VCU 2221
Alpine/Subalpine Summits and Ridges	539	0	111	259	92	77
Brushfields	2,144	48	550	765	345	436
Steep Forested Mountain Slopes	5,873	81	1,444	1,718	1,580	1,050
Moderately Steep Forested Mountain Slopes	3,840	8	1,148	2,248	85	351
Forested Hills	306	0	124	182	0	0
Colluvial/Fluvial/Coastal Surfaces	2,234	135	681	757	216	445
Lowland Wetland-Forest Complex	1,132	10	605	517	0	0
Estuaries/Beaches	0	0	0	0	0	0
Total	16,068	282	4,663	6,446	2,318	2,359

Source: Trull et al. 1997

Wind Disturbance and Recent Timber Harvest

Disturbance, whether natural or human-induced, affects the distribution of different forest structures across the landscape. Small-scale windthrow (for example, blowdown of a single tree or small group of trees) is the most common disturbance factor on the Tongass (DeMeo et al. 1992; Harris 1989). Ott (1995) found that canopy gaps occupy about 9 percent of old-growth western hemlock/blueberry/shield fern communities. Most of these were less than 540 square feet, and had been formed by the blowdown of three or fewer trees.

Wind disturbances associated with recent timber harvest are present in the three major Project Area watersheds. How many wind events caused the existing blowdown damage around harvest units is unknown. The direction that the edge of a buffer strip faces does not always control whether the buffer will be prone to wind damage. In an aerial survey of tree-fall directions around harvest units (July 1995), the harvest unit edges of both wind-disturbed and undisturbed buffer strips faced in various directions (Trull et al. 1997). (See the Fish and Timber sections in this chapter for further discussion of past timber harvest and wind effects on the Project Area forests.)

Vegetation in Riparian Management Areas

Riparian areas are difficult to define by a discrete line. While streamflow dynamics, floods, and moisture conditions influence vegetation within the riparian area, this influence gradually decreases with increased distance away from the stream or river. The Forest Service has therefore delineated Riparian Management Areas (RMAs) with specific boundaries. These boundaries may be based on vegetation changes (for example, transition from spruce-dominated types to forests dominated by other species), steep grade breaks in stream banks (a point which often coincides with the spruce transition), or obvious land forms such as major floodplain terraces.

The widths of the Project Area RMAs were calibrated from riparian vegetation and slope data collected in field transects on a selection of channel type segments. A total of 31 riparian transects in the Indian River, 10-Mile Creek, and Freshwater Creek watersheds were conducted in 1994 and 1995, along with an additional 24 riparian transects in the adjacent Game Creek watershed (Paustian et al. 1996). The following information was derived from these transects. (See the Fish Habitat section in Chapter 4 of this EIS and the Indian River Watershed Analysis, pp. 62-63 for further details.)

Along contained channels, there are narrow, broken bands of non-forested riparian vegetation that often contain Sitka alder, devil's club, stink currant, and oak fern. Above this vegetation, there typically is a western hemlock/blueberry plant association.

Along the floodplain channel types, the size of non-forested vegetation communities generally increases downstream. In the Project Area, they can be as wide as 375 feet or more. Vegetation includes red alder, devil's club, salmonberry, stink currant, oak fern, lady fern, cow parsnip, and horsetail. Sitka spruce plant associations (such as Sitka spruce/devil's club and Sitka spruce/blueberry) occur farther from the river, on slightly raised terraces. On even higher terraces, western hemlock plant associations are found.

Along the alluvial fan channels, the vegetation is primarily western hemlock/devil's club and Sitka spruce/devil's club forest types. However, one fan in the center of Indian River valley has several cottonwood, which is an uncommon species on the islands of Southeast Alaska.

Along the palustrine channels, a mixture of forest vegetation with more extensive areas of wetland vegetation is found. Some of these channels have forested and non-forested bogs along their margins, while others have calcareous fens or marshes.

Wetlands

Executive Order 11990, as amended, (Protection of Wetlands, May 1977) requires Federal agencies that exercise statutory authority and leadership over Federal lands to avoid to the extent possible the long- and short-term adverse impacts associated with the destruction or modification of wetlands. Where practicable, direct or indirect support of new construction in wetlands must be avoided. Sections 404(f)(1)(A) and (E) of the Federal Clean Water Act specifically exempt silviculture, timber harvesting, and related road construction activities from permit requirements for the discharge of dredge and fill material in wetlands (USDA Forest Service 1991).

The Army Corps of Engineers (ACOE) and the Environmental Protection Agency jointly define wetlands as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas" (ACOE 1987).

National Wetlands Inventory (NWI) maps were used to determine the distribution and acres of wetlands for the Project Area (Table 3-11). The NWI is a U.S. Fish and Wildlife Service program that uses a hierarchical approach to classify different wetland types. The NWI classifies wetlands first into five major systems: Marine, Estuarine, Riverine, Lacustrine, and Palustrine. Riverine was excluded from this analysis since the system used by the Forest Service for stream classification is more detailed (Paustian et al. 1992).

Ground water chemistry helps explain the distribution of wetlands in the study area. Bogs are wetlands where peat accumulation has separated the bog surface from ground water (for example, domed bog). They receive their mineral supply solely from rain or snow (National Wetlands Working Group 1988). In contrast, rich fens are areas of sedge peat accumulation, with slow internal drainage by seepage down low gradients. The soils are primarily organic, with three to six feet of sedge peat accumulated. The slow-moving water is enriched by nutrients from upslope materials, making the fens more mineral-rich than bogs. The vegetation generally reflects the water quality and quantity, resulting in sedge and grass fens (without trees or shrubs), shrub fens, and treed fens (National Wetlands Working Group 1988). Poor fens are intermediate between bogs and rich fens.

Except for a small amount of timber harvest and road building in some forested and nonforested wetlands, most wetlands within the watersheds are in an undisturbed condition. To date, few bogs and fens have been roaded. Rich fens have 1.4 miles of road through them: one mile in the Indian River watershed and 0.4 miles in the Freshwater Creek watershed. Presently, the forested and nonforested bogs are not a pressing biodiversity concern, since they are a common ecosystem of Southeast Alaska.

Table 3-11
Wetland Acres within Landtype Associations by VCU for the Project Area

Landtype Association	Project Area	VCU 2041	VCU 2160	VCU 2200	VCU 2201	VCU 2210	VCU 2221
Alpine/Subalpine Summits and Ridges	519.0	0	92.9	175.0	8.8	93.9	148.0
Brushfields	42.4	0	20.7	9.7	0	11.8	0.3
Steep Forested Mountain Slopes	118.0	0	22.7	36.6	20.8	18.3	19.6
Mod. Steep Forested Mountain Slopes	2,884.0	12.6	1,059.0	1,095.0	702.0	4.1	11.4
Forested Hills	681.0	0	7.4	11.1	662.0	0	0
Colluvial/Fluvial/ Coastal Surfaces	262.0	12.3	53.3	144.0	41.2	0.82	10.8
Lowland Wetland-Forest Complex	1,911.0	85.1	882.0	526.0	381.0	36.8	0
Estuaries/Beaches	16.0	0	0	0	16.0	0	0
Total	6,433.0	110.0	2,138.0	1,997.0	1,832.0	166.0	190.0

Source: Trull et al. 1997

Wildlife

The Tongass National Forest provides habitat for 54 species of mammals, 231 species of birds, and five species of amphibians and reptiles. There are an additional 18 species of marine mammals found in Southeast Alaska which depend entirely on the ocean environment, and 45 birds and 3 amphibian or reptile species considered casual or accidental visitors to Southeast Alaska (USDA Forest Service 1997a). Many of these species are in the Project Area. Two notable exceptions are black bear and wolf, which do not occur anywhere on Chichagof Island.

Wildlife are found in a diverse range of land types and plant communities, and are adapted to climatic extremes, changes in habitat, predation, and hunting pressure. This results in a Project Area rich in both species and habitats. This richness is appreciated and valued by the public. Wildlife may be viewed and photographed; harvested for sport or subsistence purposes; and valued for spiritual or ecological reasons.

Wildlife Habitat

Habitat is the environment in which a wildlife species occurs. It is described in physical and biological terms, which include elevation, topography, forest structure, and vegetation type. A wildlife species may occupy a range of habitat types at various times of the year. Important habitat types that occur in the Project Area include beach fringe, estuary fringe, old-growth, second-growth, alpine/subalpine, and riparian areas. The acres of these habitats in the Project Area are displayed in Table 3-12. Since alpine/subalpine habitats will not be affected by the proposed timber management activities, they will not be discussed in this section.

Table 3-12
Acres of Project Area Wildlife Habitat

Habitat Type	Total Acres in 1996
Beach Fringe (Forested)	740
Estuary Fringe (Forested)	500
Old-growth	19,076
Second-growth	2,228
Riparian (Forested)	3,092
Source: Shipley 1996	

Beach Fringe Habitat

Beach fringe is the strip of land within a 1000-foot horizontal distance inland from the saltwater shoreline, not including estuaries. It is a transitional zone between land and water, salt water and fresh water, and vegetated and non-vegetated conditions (USDA Forest Service 1997a). Forested areas in this transition zone receive heavy use by species that have high economic, recreational, subsistence, or aesthetic values. Brown bear, river otter, bald eagle, marten, and Sitka black-tailed deer are typical species that concentrate their activities in these forest stands during some or all seasons of the year.

Estuary Fringe Habitat

Estuary fringe is the land within 1,000-foot horizontal distance around river mouths or estuaries. It is similar to beach fringe, but because of its species diversity it has greater value to wildlife, especially brown bears, river otters, mink, bald eagles, and waterfowl.

Old-Growth Habitat

In this EIS section, old-growth habitat refers to inventoried forest stands with a timber volume greater than 8,000 board feet per acre, having trees which are at least 150 years old, with an average diameter at breast height greater than nine inches. Old-growth forests typically possess the following characteristics:

- large trees, with wide variation in tree sizes and spacing;
- accumulations of large, dead, standing and fallen trees;
- a high incidence of trees with broken or deformed tops, disease, and decay; and
- multiple canopy layers, with canopy gaps and understory patchiness.

These characteristics, and the spatial arrangement of old-growth habitat, influence the function of the ecosystem. Old-growth forests are important habitat for Sitka black-tailed deer, marten, brown bear, and cavity nesting birds such as the hairy woodpecker. Acres of old-growth forest are also included in beach fringe, estuary fringe, riparian and other habitat type acreages.

Second-growth Habitat

Second-growth habitats are even-aged stands less than 150 years old that have been commercially harvested. Second-growth habitat is of lower value to most wildlife, because conifer seedlings aggressively invade and eventually shade out desirable herbaceous vegetation.

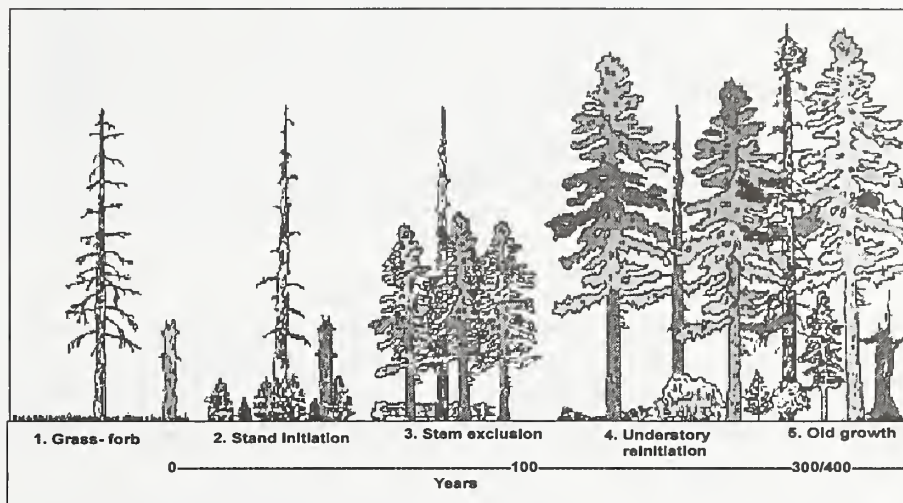
Riparian Habitat

Riparian areas occur along rivers and streams or around inland lakes, and contain elements of both aquatic and terrestrial ecosystems. These areas are important migration routes for some wildlife species, because of the presence of water, food, and cover. Riparian habitats in the Project Area are very important for eagles, furbearers, and brown bears.

Forest Function and Structure

Following clearcutting, a forest stand begins its progression to old-growth. For the first twenty years after harvest, the stand regenerates and abundant seedlings are started; this is called the stand initiation stage. As the new stand grows taller and the individual canopies touch, the understory is shaded and dies back; this stage is the stem exclusion stage, and lasts from 30 to 150 years after harvest. Approximately 130 to 160 years after harvest, understory develops and some features of old-growth structure occur (understory reinitiation stage). After an additional 150 years, old-growth forest structure is fully developed (old-growth stage). See Figure 3-3.

Figure 3-3 Forest Structure



Thinning in harvested stands would open the canopy, allowing forbs and shrubs to grow and provide forage. The benefits of these thinnings are usually short-lived; after 15 to 20 years, the canopy will again close and the understory layer will revert to moss cover. Repeated thinnings would provide some benefits to wildlife, although not at the same level as in undisturbed stands.

Fragmentation

Large, contiguous blocks of old-growth forest (patches) are generally recognized as an important factor in maintaining viable wildlife populations. As roads are constructed and timber is harvested in old-growth forest, these contiguous blocks are broken down, or fragmented, into smaller pieces.

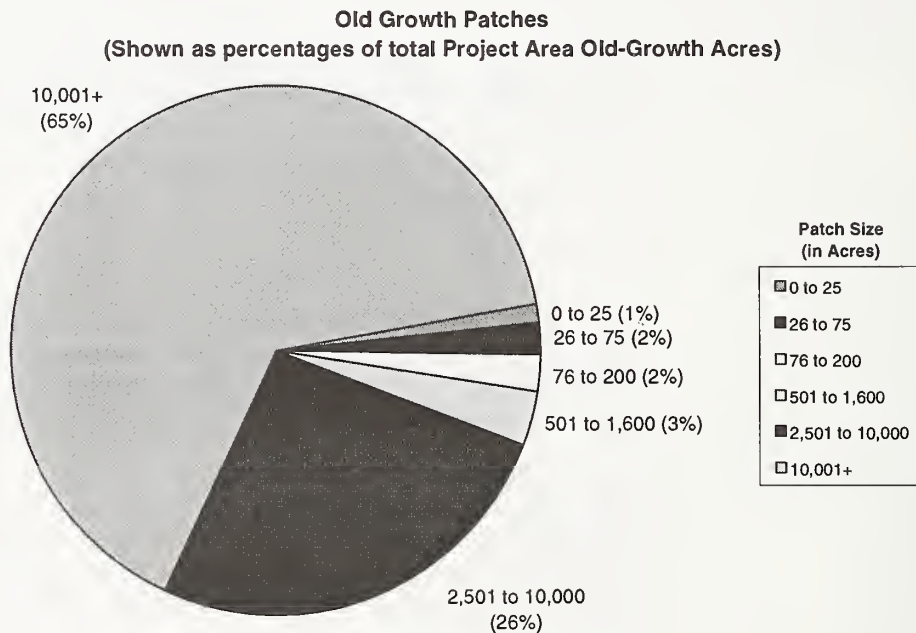
Past large-scale clearcut timber harvesting within the Project Area has fragmented old-growth habitats and altered their distribution. An analysis using a geographic information system (GIS) database was conducted to determine the effects of this harvest and resulting fragmentation on old-growth patches. Table 3-13 and Figure 3-4 display the existing number of patches and total patch acres in the Project Area. The patches are grouped by size.

An optimal patch size has been determined for three management indicator species (MIS) as follows: brown creeper, greater than 15 acres; red-breasted sapsucker, greater than 250 acres; and hairy woodpecker, greater than 500 acres. Over 90 percent of the old-growth patch acreage in the Project Area is contained in patches greater than 500 acres. Table 3-13 and Figure 3-4 display the percentage of patch acreage for each size category.

Table 3-13 Project Area Old-Growth Patch Size		
Patch Size in Acres	Number of Patches	Total Patch Area Acres (%) *
0 to 25	13	168 (1%)
26 to 75	10	330 (2%)
76 to 200	3	377 (2%)
501 to 1600	2	530 (3%)
2,501 to 10,000	6	4,321 (26%)
Greater than 10,000	1	10,788 (65%)

Source: Peterson 1996
* Percentage of total old growth in Project Area.

Figure 3- 4 Old-Growth Patch Size



Management Indicator Species

Management indicator species (MIS) are species whose response to land management activities can be used to predict the likely response of other species with similar habitat requirements. By using the MIS concept, the total number of species to be analyzed within a Project Area is reduced to a manageable set that collectively represents the complex of habitats, species, and associated management concerns. MIS are also used to help establish management goals for species in public demand, such as deer for sport hunting and subsistence uses. The modified 1997 Forest Plan standards and guidelines include the use of forest plan management indicators, such as MIS, to evaluate the potential effects of proposed actions affecting wildlife habitat (USDA Forest Service 1997a).

The MIS species chosen for this Project Area are the Sitka black-tailed deer, brown bear, river otter, marten, red squirrel, brown creeper, red-breasted sapsucker, hairy woodpecker, and bald eagle. Although some of these MIS are associated with several habitat types, all are associated with the spruce and hemlock forests found in the Project Area. Table 3-14 displays the relative importance of conifer successional stages as habitat for the chosen MIS. It can be seen that productive old-growth (that is, conifer stands greater than 150 years in age and having a volume of 8,000 board feet per acre or higher) provide essentially all of the highly important habitats, and most of the moderately important habitats, for all of the chosen MIS (USDA Forest Service 1997a).

Table 3-14
Relative Importance of Conifer Successional Stages as Habitats
for Management Indicator Species

Species	Season of Use					Conifer Successional Stages					
	winter	spring	sum.	fall	all year	Early (in years) 0-25	Mid (in years) 26-150 150-200		Late (>200 years)		
									Unproductive Old-Growth	Productive Old-Growth Low-Med High	
Red Squirrel					x	L	L-H	H	L	M-H	M-H
Brown Bear			x			L	L	L	M-H	M-H	M-H
Marten	x					L	L	L	L	M	H
River Otter		x	x			L	L	M	L	H	H
Sitka Black-tail Deer	x					L-M	L	L-M	L-M	M	H
Bald Eagle		x	x			L	L	L	L	H	H
Red-br. Sapsucker		x	x			L	L	L	L	H	M
Hairy Woodpecker	x					L	L	L	L	L	M-H
Brown Creeper	x					L	L	L	L	L	L-H

Source: USDA Forest Service 1997a

H = Highest importance, high population densities.

M = Moderate importance, moderate population densities.

L = Least importance, low population densities.

Sitka Black-tailed Deer - *Odocoileus hemionous sitkensis*

Sitka black-tailed deer are found throughout Southeast Alaska. This wildlife species receives the highest sport hunting and subsistence use of all land species in this part of Alaska. The State of Alaska and the Federal Subsistence Board are responsible for the numbers of deer allowed to be taken for harvest (USDA Forest Service, 1997a).

Sitka black-tailed deer represent those species that use lower elevation old-growth forest habitats during winter. Winter habitat (both quantity and quality) is considered the most limiting factor for this species in Southeast Alaska. The deer winter habitat capability model takes into account snow depths and winter severity, the value of lower elevations and south-facing aspects, and conifer successional stages. Old-growth forests have the highest value because they intercept snow and provide understory forage plants. Lack of snow interception reduces the deer habitat value of early successional forest stages. The value of middle successional stages is reduced because of lack of forage (USDA Forest Service, 1997a).

The Project Area currently has about 20,819 acres of forested land (all age classes and types of conifer forests) below 1,500 feet elevation within occupied deer habitat. The Sitka black-tailed deer model, as refined by the modified 1997 Forest Plan, was used to generate a Project Area habitat capability of 963 deer. (For more information regarding this model, see the 1997 TLMP EIS, pages 3-365 to 3-370.)

Sitka black-tailed deer use a variety of vegetation communities throughout the year, and no specific corridor requirements have been identified. The effects of patch size and forest fragmentation on deer habitat capability remain uncertain (USDA Forest Service 1997a). Sitka black-tailed deer are critically important to subsistence users, and are discussed in further detail in the Subsistence sections of this EIS.

Brown Bear - *Ursus arctos*

Brown bears are common on Chichagof Island, using areas from sea level to the alpine. The late summer season has been identified as the most critical or limiting period for brown bear. During this season, many brown bears concentrate along low-elevation valley bottoms and salmon streams. These are often the same areas of highest human use and most intense resource development activities. During this season, brown bears use a variety of habitats, with estuaries and riparian areas having the highest habitat value.

Streams and rivers that produce salmon, such as Indian River, have a higher value for brown bears than resident fish streams. Brown bears have not been identified as a species requiring minimum patch sizes of a particular habitat type. They are not known to have specific vegetation corridor requirements, as they travel and move through a variety of terrain and vegetation conditions (USDA Forest Service 1997a).

The Project Area currently has about 37,177 acres (excluding rock, permanent ice fields, and acres of lakes) within occupied brown bear habitat.

Increases in human activity in an area may result in increased direct human-caused deaths of bears. Average road density in the Project Area is 0.38 miles of system road per square mile (see the Transportation System section). Roads provide additional access for hunters and may indirectly cause increased harvests. However, the Northeast Chichagof Controlled Use Area (which includes all of the Project Area) is closed by ADF&G and Federal Subsistence Board regulations to the use of any motorized land vehicle for brown bear hunting (USDI 1997). According to ADF&G Sitka Division of Wildlife Conservation, there have been five sport-hunted bears taken from the Project Area from 1990 to 1995, and no recorded illegal kills, wounding losses, or defense of life or property kills (Shipley 1996).

River Otter - *Lutra canadensis*

River otters are associated with coastal and fresh water aquatic environments and the immediately adjacent (within 100 to 500 feet) upland habitats. Beach characteristics affect the availability of food and cover. Adjacent upland vegetation is also important in providing cover for otters. Old-growth forests have the highest habitat value, providing canopy cover, large diameter trees and snags, and burrow and den sites. Younger successional stages provide lower quality habitat (USDA Forest Service 1997a).

The Project Area currently has about 4,330 acres of forested land (all age classes and types of conifer forests) within occupied river otter habitat. According to ADF&G, there have been no river otters trapped in the Project Area from 1990 to 1995 (Shipley 1996).

Marten - *Martes americana*

Marten naturally inhabit the mainland of Southeast Alaska, and natural populations occur on Kuiu, Kupreanof, Mitkof, and Revillagigedo Islands. Some were transplanted to Chichagof Island between 1930 and 1950, to provide a furbearer for trappers (Burris and McKnight 1973). They are currently found in all Project Area VCUs.

Marten represent species using lower elevation old-growth forest habitats during the winter season. Winter habitat (both quantity and quality) is the most limiting factor in Southeast Alaska. Due to lower snow accumulation, habitats at lower elevations have higher value for wintering marten. Coastal habitats (beach fringe) and riparian areas have the highest value, followed by upland habitats below 1,500 feet in elevation (USDA Forest Service 1997a, pg. 3-354).

The Project Area currently has about 21,569 acres of forested land (all age classes and types of conifer forests) below 1,500 feet elevation within occupied marten habitat.

Of the successional stages, old-growth forests have the highest value because they intercept snow, provide cover and denning sites, and provide habitat for prey species used by marten. Dispersal across saltwater is limited, but marten are fairly mobile on land. Conifer corridors may enhance movement and dispersal (USDA Forest Service 1997a).

Marten are easily trapped and can be overharvested. Forest management activities resulting in increased access may result in the potential for overtrapping. Open roads provide additional access for trappers and may indirectly cause increased harvests (USDA Forest Service 1997a). However, the Northeast Chichagof Controlled Use Area (which includes all of the Project Area) is closed by Federal Subsistence Board regulations to the use of any motorized land vehicle for trapping marten (USDI 1997). According to ADF&G Sitka Division of Wildlife Conservation, there have been 233 marten trapped in the Project Area from 1990 through 1998 (Shipley 1996).

The modified 1997 Forest Plan (USDA Forest Service 1997) standards and guidelines for marten identify East Chichagof Island as a high-risk biogeographic province. This means that a significant amount of timber harvest has occurred in the region, resulting in the conversion of productive old-growth forest to young conifer stands. Within these stands, there is little or no residual forest structure.

When harvesting timber in such provinces, the management objective is to retain features of forest stand structure important to marten habitat use. This is done by maintaining an average of over 30 percent canopy closure, keeping some windfirm trees for future snag recruitment, and retaining down material throughout the harvest unit. It is especially important to retain these features in VCUs where over 33 percent of the productive old-growth forest has been converted to young conifer stands, or will exceed this amount after a proposed project activity.

Other less restrictive standards and guidelines apply to VCUs where less than 33 percent of the original old-growth forest has been harvested (USDA Forest Service 1997). Currently, all of the VCUs in the East Chichagof Island biogeographic province (including the Project Area) have less than 33 percent of the original old-growth forest in a harvested (second-growth or young conifer) condition (Shipley 1996).

Red Squirrel - *Tamiasciurus hudsonicus*

Before 1930, red squirrels in Southeast Alaska existed only on the mainland. In 1930 and 1931, they were introduced to Baranof and Chichagof Islands as a potential prey species for transplanted marten. Today, red squirrels are abundant on these islands (USDA Forest Service 1997a).

Red squirrels require forests with cone-producing trees and cavities in trees and snags. They represent a species that can do fairly well in seed-producing second-growth stands. Spruce trees and mature to old-growth forests have the highest habitat values for this species. Habitat usually does not exist for red squirrels above 2,000 feet in elevation.

Optimum habitat is believed to occur when patches of preferred habitat are greater than 30 acres. Approximately 98 percent of the old-growth in the Project Area is in patches greater than 30 acres. See Table 3-13 and Figure 3-4 for more information regarding patches in the Project Area. Corridors of pole timber or older stands of trees also facilitate movement and dispersal (USDA Forest Service 1997a).

The Project Area currently has about 26,325 acres of forested land (all age classes and types of conifer forests) below 2,000 feet elevation within occupied red squirrel habitat. There are no current population data available regarding red squirrels in the area.

Brown Creeper - *Certhia americana*

The brown creeper is considered an uncommon, permanent resident bird throughout Southeast Alaska. This species is associated with large old-growth trees and is most closely associated with high volume old-growth (USDA Forest Service 1997a).

Winter habitat has been suggested as the limiting factor for cavity-nesting birds, including the brown creeper. Optimum habitat use is believed to occur when patches of preferred habitat are greater than 15 acres (USDA Forest Service 1997a). Approximately 99 percent of the old-growth in the Project Area is in patches greater than 15 acres. (See Table 3-13 and Figure 3-4.)

The Project Area currently has about 8,380 acres of forested land (all age classes and types of conifer forests) within occupied brown creeper habitat. There are no current population data available regarding brown creepers in the area.

Red-Breasted Sapsucker - *Sphyrapicus ruber*

The red-breasted sapsucker is found throughout Southeast Alaska during the spring, summer, and early fall seasons. They are called primary excavators because they create cavities for other cavity-using wildlife species (USDA Forest Service 1997a). Red-breasted sapsuckers are summer residents that use old-growth forest habitats with snags. The quantity of snags has a direct relationship to the number of red-breasted sapsuckers within an area. Old-growth forests provide the best snag habitat over the long term, with the low volume strata of old-growth receiving more use than high volume strata. Optimum habitat use is believed to occur when patches of preferred habitat are greater than 250 acres (USDA Forest Service 1997a). Approximately 95 percent of the old-growth in the Project Area is in patches greater than 250 acres. (See Table 3-13 and Figure 3-4.)

The Project Area currently has about 24,071 acres of forested land (all age classes and types of conifer forests) within occupied red-breasted sapsucker habitat. There are no current population data available regarding red-breasted sapsuckers in the area.

Hairy Woodpecker - *Picoides villosus*

The hairy woodpecker is considered an uncommon, permanent resident throughout Southeast Alaska. Like the red-breasted sapsucker, hairy woodpeckers are primary cavity excavators for other cavity-using wildlife species (USDA Forest Service 1997a).

Hairy woodpeckers use old-growth forest habitats with snags and partially dead trees for foraging and nesting. Their winter habitat may be the most limiting for them. Snag quantity has a direct relationship with the potential for an area to support hairy woodpeckers. Old-growth forests provide the best long-term snag habitat, with high volume old-growth stands receiving more use than low-volume stands. Optimum habitat use is believed to occur when patches of preferred habitat are greater than 500 acres (USDA Forest Service 1997a). Approximately 94 percent of the old-growth in the Project Area is in patches greater than 500 acres. (See Table 3-13 and Figure 3-4.)

The Project Area currently has about 17,190 acres of forested land (all age classes and types of conifer forests) within occupied hairy woodpecker habitat. There are no current population data available regarding hairy woodpeckers in the area.

Bald Eagle - *Haliaeetus leucocephalus*

North America's bald eagle population is at its highest density in Southeast Alaska. Here the bald eagle population was estimated in 1992 to be over 13,000 adult birds. Over 8,000 nest sites were identified as of 1996 (USDA Forest Service 1997a). Bald eagle nesting habitat is primarily old-growth trees along the coast and within riparian areas.

The Project Area currently has about 2,840 acres of forested land (all age classes and types of conifer forests) within occupied bald eagle habitat.

The U.S. Fish and Wildlife Service (USFWS) and Forest Service maintain an interagency agreement for bald eagle habitat management in the Alaska Region, which includes standards and guidelines for regulating human disturbance within identified bald eagle use areas. For example, all identified eagle nest trees are surrounded by a minimum 330-foot radius protective habitat management zone (USDA Forest Service 1997a). The USFWS has identified twelve nest sites in the Indian River Project Area. Table 3-15 displays the number of identified eagle nest trees and the VCU in which they are located.

Table 3-15 Number of Eagle Nests by VCU	
VCU	Nests within Project Area
2201	2
2210	9
2221	1
Total	12
Source: Shipley 1996	

Consumptive Use of Wildlife

A number of wildlife species in the Tongass National Forest are important for subsistence and sport hunting, and some for trapping. Sitka black-tailed deer, brown bear, marten, river otter, and waterfowl are hunted and trapped in the Project Area. Bag limits and seasons are managed by the ADF&G and Federal Subsistence Board for sport and subsistence uses, respectively (USDA Forest Service 1997a).

Sitka black-tailed deer are by far the most important and harvested terrestrial wildlife species for subsistence purposes and for sport hunting. Subsistence and sport hunting for deer and, to a lesser extent, other wildlife are very closely related activities in the Project Area. See the Subsistence sections in Chapters 3 and 4 of this EIS for more information on subsistence and sport uses of deer and other wildlife.

Population Viability

Fish and wildlife habitat must be managed to maintain viable populations of existing native and desired non-native vertebrate species in the planning area. (A “planning area” for determining viable populations is the ecological province level [USDA Forest Service 1991]. See Table 3-1 for ecological level summary.) A viable population is one that has the estimated numbers and distribution of reproductive individuals needed to ensure its continued existence, and is well distributed in the planning area (NFMA 1976).

In order to maximize the probability that viable populations will be maintained over time, habitat must be provided to support at least a minimum number of reproductive individuals. In addition, the habitat must be well distributed so that those individuals can interact with others in the planning area.

The modified 1997 Forest Plan identified development and non-development land use designations (LUDs) that provide habitat to maintain viable, well-distributed populations of desired vertebrate species. Examples of development LUDs include Timber Production and Modified Landscape (see Table 1-2). Examples of non-development LUDs are Wilderness and Old-growth Habitat. Across the Tongass National Forest, 22.4 percent of the acres are in development LUDs, while 77.6 percent are in non-development LUDs.

In addition, the standards and guidelines identify other non-development areas, such as beach and estuary fringes and stream buffers, that also provide habitat and travel corridors, further reducing risks to wildlife population viability. (See the 1997 TLMP EIS, pages 3-380 and 3-381 for additional information.)

None of the past management activities in the Project Area have substantially increased the risk that viable populations will not be maintained over time. In addition, habitats and connections between habitats have not been fragmented to such a high degree that the distribution of species has been measurably affected.

Threatened, Endangered, and Alaska Region Sensitive Species

Endangered Species Act of 1973

The Endangered Species Act of 1973 was enacted "to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species...." Table 3-16 displays the threatened and endangered species, as well as species of concern listed by the U.S. Fish and Wildlife Service (terrestrial animals and plants), National Marine Fisheries Service (marine animals), and U.S. Forest Service - Alaska Region (sensitive animals and plants) that may be in or near the Project Area.

Table 3-16
**Threatened, Endangered, Species of Concern, and Sensitive Species
Which May Occur in the Indian River Project Area**

Common Name	Scientific Name	Federal Status	Alaska Region Status
Humpback whale	<i>Megaptera novaengliae</i>	E	--
Steller sea lion	<i>Eumetopias jubatus</i>	T	--
American peregrine falcon	<i>Falco peregrinus anatum</i>	E	--
Marbled murrelet	<i>Brachyramphus marmoratus</i>	C	--
Harlequin duck	<i>Histrionicus histrionicus</i>	C	--
Northern goshawk	<i>Accipiter gentilis</i>	C	S
Olive-sided flycatcher	<i>Contopus borealis</i>	C	--
Osprey	<i>Pandion haliaetus</i>	--	S
Trumpeter swan	<i>Cygnus buccinator</i>	--	S
Peale's peregrine falcon	<i>Falco peregrinus pealei</i>	--	S
Ascending moonwort	<i>Botrychium ascendens</i>	C	--
Goose-grass sedge	<i>Carex lenticularis</i> var. <i>dolia</i>	C	S
Norberg arnica	<i>Arnica lessingii</i> ssp. <i>norbergii</i>	--	S
Pretty shooting star	<i>Dodecatheon pulchellum</i> ssp. <i>alaskanum</i>	--	S
Kamchatka rockcress	<i>Draba kamtschatica</i>	--	S
Davy mannagrass	<i>Glyceria leptostachya</i>	--	S
Wright filmy fern	<i>Hymenophyllum wrightii</i>	--	S
Truncate quillwort	<i>Isoetes truncata</i>	--	S
Calder lovage	<i>Ligusticum calderi</i>	--	S
Choris bog orchid	<i>Platanthera chorisiana</i>	--	S
Bog orchid	<i>Platanthera gracilis</i>	--	S
Loose-flowered bluegrass	<i>Poa laxiflora</i>	--	S
Kamchatka alkali grass	<i>Puccinellia kamtschatica</i>	--	S
Unalaska mist-maid	<i>Romanzoffia unalaschcensis</i>	--	S
Queen Charlotte butterweed	<i>Senecio moresbiensis</i>	--	S
Circumpolar starwort	<i>Stellaria ruscifolia</i> ssp. <i>aleutica</i>	--	S
Northern rockcress	<i>Draba borealis</i> var. <i>maxima</i>	--	S

Sources: USFWS 1996a, NMFS 1996, USDA Forest Service 1995c

E= Endangered Species: is in danger of extinction throughout all or a significant portion of its range.

T= Threatened Species: is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

C= Species of Concern (former Category 2 Candidate species): species for which there is some evidence of vulnerability, but for which there are not enough data to support a listing proposal at this time.

S= Sensitive species: species that is considered sensitive due to its behavior or critical life cycle component that may be affected or is considered sensitive through its association with a habitat type that is particularly sensitive.

Wildlife

The humpback whale was federally listed as endangered in 1970 and occurs in most of the marine waters of Southeast Alaska. There is no designated critical habitat nor is there any area being considered for designation as critical habitat in or near the Project Area (Shipley 1996a).

The Steller sea lion was designated as threatened on April 5, 1990. This species may occur near the Project Area. However, no critical habitats are designated in or near the Project Area at this time (Shipley 1996a).

Marbled murrelets are common in Southeast Alaska and are known to occur in the Project Area. These sea birds nest on branches of old-growth coniferous trees. Nesting surveys have been conducted in the Project Area. Nearshore marine surveys and dawn watches were conducted in the Project Area by Forest Service biologists in 1994 and 1995, during which a total of 881 marbled murrelet detections were recorded. The Biological Assessment and Biological Evaluation in Appendix B and the Planning Record contain additional information regarding marbled murrelet surveys and results.

Northern goshawks nest in old-growth forest stands in Southeast Alaska. To avoid timber harvest near goshawk nesting sites, Forest Service biologists conducted surveys of proposed units and road locations in 1994 and 1995. The Biological Assessment and Biological Evaluation in the Planning Record contain additional information regarding goshawk surveys and results. A goshawk was seen in the 10-Mile Creek drainage in 1993 and 1995. In 1995, a plucking post, two inactive nest sites, and a possible goshawk response to recorded calls were documented in the Freshwater Creek drainage.

At least three harlequin ducks were observed in the Indian River estuary in September 1997. No other observations in the Project Area have been recorded. Although olive-sided flycatcher, osprey, trumpeter swan, or Peales or American peregrin falcons may occur in the Project Area, none of these species are known to occur there.

Fish

There are no federally listed threatened, endangered, or sensitive fish species known to occur in the Project Area.

Plants

There are no federally listed or proposed threatened or endangered plant species known to occur in the Project Area.

There are 22 vascular plants designated as sensitive by the Regional Forester for the Alaska Region (see list in Appendix B, Biological Evaluation for Plants). Of these plants, 16 are known or suspected to occur on the Sitka and Hoonah Ranger Districts and possibly in the Project Area. They are known or suspected to occur because of their range and/or general habitat requirements. In addition to these, the following plant species may be added to the R-10 sensitive species list in the future:

- Smooth-fruited netleaf willow, *Salix reticulata* ssp. *glabellicarpa*
- Ascending moonwort, *Botrychium ascendens*
- Undescribed moonwort, *Botrychium* sp.

The Forest Service conducted surveys in 1995 and 1996 for sensitive plants in the Project Area. Several proposed new road corridors and harvest units with high probability of sensitive plant occurrence in the Project Area were surveyed. High probability sites generally include alpine/sub-alpine habitat, muskegs, swales, meadows (upper beach, dry or wet meadows), streamsides, lake margins, and rock outcrops. Several populations of choris bog orchid were located in the Project Area, in proposed units and along proposed road corridors. Survey protocols, results, and the risk assessment are documented in the Biological Evaluation for plants (Trull 1996a). Northern rockcress, Kamchatka rockcress, and choris bog orchid were dropped from the Alaska Region Sensitive Plant List in May 1999 (See Appendix B).

Timber

Project Area Land Base by Timber Classification

The Indian River Project Area contains 35,723 acres of National Forest System lands. These lands are classified as either forest land or non-forest land (see Figure 3-5). Forest land is defined as having at least 10 percent tree cover, and accounts for roughly 64 percent (22,751 acres) of the Project Area. The remaining 36 percent (12,972 acres) of the land base is classed as non-forest land. Non-forest lands include estuarine tidal flats, shrub riparian areas, muskegs, meadows, alpine areas, brushfields, rock outcrops, and freshwater lakes.

Forest Land

Forest land producing or capable of producing crops of industrial wood is classified as productive forest land (also called timberland). These lands can produce more than 20 cubic feet of wood per acre per year (USDA Forest Service 1997). Old-growth and second-growth qualify. This includes stands established following natural disturbances or logging. About 51 percent (18,084 acres) of the land in the Project Area is productive forest.

Non-productive forest land is forest land that is incapable of producing commercial quantities of timber. Approximately 14 percent (4,667 acres) of the Indian River Project Area is non-productive forest land.

Table 3-17 summarizes the area of forest (productive and non-productive) and non-forest land in the Project Area. Acres here and throughout this section are derived from the Sitka Office timber database, updated in 1993 - 1994 through field reconnaissance and photo interpretation.

Table 3-17 Project Area Landbase (Acres)				
VCU	Non-Forested	Non-Productive Forest	Productive Forest	Total
2041	390	80	279	749
2160	3,536	1,715	5,232	10,483
2200	5,946	1,811	7,160	14,917
2210	1,271	287	2,738	4,296
2221	1,829	774	2,675	5,278
Total	12,972	4,667	18,084	35,723

Source: Regan and Peterson 1996

Tentatively Suitable Forest Land

Productive forest land is classified as either tentatively suitable or not tentatively suitable for timber harvest. Within the Project Area, 14,082 acres are classed as tentatively suitable. In order to be tentatively suitable, forest land must:

- be capable of harvest with available technology to ensure timber production without irreversible resource damage to soil productivity or watershed conditions;
- have a reasonable assurance that the area can be restocked after final harvest;
- not be withdrawn from timber production by an Act of Congress, the Secretary of Agriculture, or the Chief of the Forest Service; and
- have adequate information available to project responses to timber management activities (USDA Forest Service 1997).

Timber Strata. Three volume strata (low, medium, and high) are distinguished for productive forest land, by using the existing GIS inventory (TIMTYP) and additional information on soils and slopes (USDA Forest Service 1997). Volumes per acre for the timber strata are displayed in Table 3-18.

Table 3-18 Timber Volume Strata	
Volume Strata	Average Volume per Acre (mbf)*
Low	12.9
Medium	23.2
High	38.3

Source: USDA Forest Service 1997

* Net sawlog + utility, Bureau Long Log Scale.

Table 3-19 shows the acreage by volume strata and VCU of tentatively suitable forest land in the Indian River Project Area. The 4,608 acres of available suitable lands shown in the table represent the total land base from which harvest units can be proposed under this project. Of the tentatively suitable acres, those not available for harvest (9474 acres) include the following:

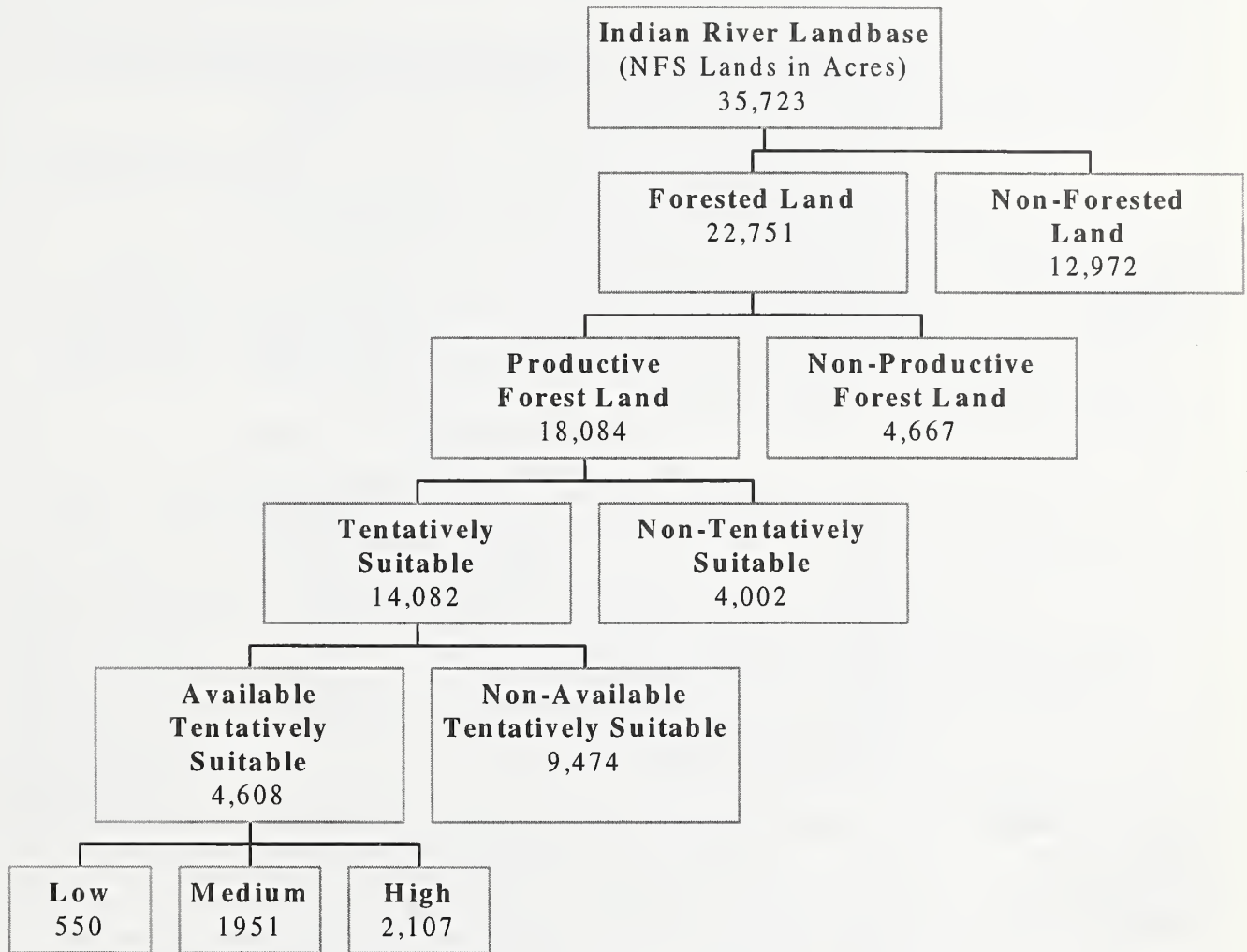
- lands with less than 8 mbf per acre;
- lands within LUDs where programmed timber harvest is not allowed (for example, Old-growth LUDs);
- lands within the 1,000-foot beach fringe; and
- lands within Riparian Management Areas.

Table 3-19 Acres of Available Suitable Land by Volume Strata				
VCU	Low Volume	Medium Volume	High Volume	Total
2041		45	105	150
2160	273	803	778	1,854
2200	277	707	878	1,862
2210		16		16
2221		380	346	726
Total	550	1,951	2,107	4,608

Source: Regan and Peterson 1996

Figure 3-5 Timber Land Classification Process for this Project

Indian River Landbase



Species Composition of Forest Lands

Western hemlock (*Tsuga heterophylla*) and Sitka spruce (*Picea sitchensis*) dominate timber stands throughout much of the Project Area. Alaska-cedar (*Chamaecyparis nootkatensis*) is an important associated species found in conjunction with the hemlock and spruce. Other tree species include red alder (*Alnus rubra*), mountain hemlock (*Tsuga mertensiana*), and lodgepole pine (*Pinus contorta*). The commercial species composition of the Project Area is 82.6% western and mountain hemlock, 14.8% Sitka spruce, and 2.6% Alaska-cedar.

In general, spruce and hemlock are found on the better-drained, more productive sites on the lower and upper slopes within the Project Area. Spruce occupy much of the valley bottoms. Timber harvest in some of these areas has changed their composition from spruce-dominated plant associations to red alder-dominated associations, although most are returning to predominantly spruce and hemlock.

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Alaska-cedar is typically found in conjunction with hemlock on lower and upper slopes, and also on poorly-drained sites such as muskegs that occur within the Project Area. Alaska-cedar typically occurs as a minor component on the better-drained sites. Its ability to regenerate and successfully compete with hemlock on these sites is limited because it has less tolerance to shade. On sites with poorer drained soils, Alaska-cedar is often found in greater numbers, and in many cases may be the dominant tree species. The ability of Alaska-cedar to successfully regenerate and compete in areas of high water tables and poorer soil drainage makes this species an important component of these sites.

Red alder is found along roads and streams and occasionally on steeper slopes where soils have been highly disturbed by natural events and processes or by human activities. Red alder is not considered a commercial species in Southeast Alaska.

Lodgepole pine (also called shore pine) is considered a commercial species throughout much of its range in the western United States. However, lodgepole pine is rarely harvested in Southeast Alaska because it seldom meets merchantability standards.

Past Timber Harvest

The timber harvested to date within the Indian River Project Area has been from old-growth stands. Commercially harvested species include western and mountain hemlock, Sitka spruce, and Alaska-cedar. Table 3-20 summarizes the acreage previously harvested in the Project Area. Almost all of these harvested areas were clearcut using the highlead yarding method, or (prior to 1970) A-frame structures.

Table 3-20 History of Timber Harvest Acres by VCU						
VCU	Pre-1961	1961-1970	1971-1980	1981-1990	1991-1994	Total
2041						0
2160			34	572		606
2200	1		593	230		824
2210	112	348				460
2221				331		331
Total	113	348	627	1,133	0	2,221

Source: Regan and Peterson 1996

Precommercial Thinning of Past Harvest Stands

Precommercial thinning involves the selective removal of trees from second-growth stands that are 15 to 25 years old. Thinning reduces competition among trees in the stand, which stimulates growth of the remaining trees. Precommercial thinning may also control species composition, improve windfirmness, improve forest vigor and health, and maintain an open understory, thereby extending the time period when understory browse species suitable for wildlife is available. Table 3-21 summarizes past precommercial thinning within the Project Area. In addition, approximately 209 acres of second-growth have been identified for precommercial thinning treatments over the next 5 years.

Table 3-21 Past Precommercial Thinning		
VCU	Acres	Name
2210	147	Whip Station
2221	154	10-Mile Creek
Total	301	

Source: Tongass National Forest, Sitka Office SIS database.

Subsistence

For many rural southeast Alaska residents, subsistence use of natural resources on the Tongass National Forest is a way of life. Through subsistence, these people are able to maintain their physical health and well being, as well as their economic, cultural, and social existence.

Subsistence activities include hunting for deer, bear, marine mammals, and birds; digging clams, catching fish and shellfish (salmon, shrimp); harvesting marine invertebrates (sea cucumbers); trapping furbearers (martens); collecting firewood; collecting herring eggs; and collecting berries and edible plants and roots. Subsistence goods may be eaten, traded, given away, or made into an item of use or decoration.

The taking of fish and wildlife on public lands for subsistence uses is restricted to Alaska residents of rural areas or rural communities. The Alaska National Interest Lands Conservation Act (ANILCA) provides for "the continuation of the opportunity for subsistence uses by rural residents of Alaska, including both Natives and non-Natives, on public lands." It also legislates that "customary and traditional" subsistence uses of the renewable resources "shall be the priority consumptive uses of all such resources on the public lands of Alaska." Non-rural residents are not provided a preference for the taking of fish and wildlife on public lands. Juneau and Ketchikan have been determined to be non-rural by the Federal Subsistence Board.

Subsistence resources are inventoried and assessed in terms of:

- **Abundance and distribution.** This refers to the resource supply and how much is needed to satisfy demand.
- **Competition.** This refers to who is using the resource, by community.
- **Access.** This refers to the ability and methods used by subsistence resource users to enter the Project Area. Access may be increased by road and LTF construction or reduced by Road Management Objectives that restrict motorized vehicle access.

Abundance and Distribution

The Sitka black-tailed deer is the most important subsistence resource in the Project Area that may be affected by management activities, and so is the focus of the following discussion. See the Wildlife sections in Chapters 3 and 4 for additional information on deer and other species used for subsistence purposes.

A habitat suitability index model was used to estimate deer populations based on habitat capability. Table 3-22 displays estimated habitat capability in Wildlife Analysis Areas (WAAs) 3525 and 3526. (WAAs are management units delineated by the ADF&G. The Project Area encompasses part of WAAs 3525 and 3526, and a very small portion of WAA 3523. See Figure 3-6.)

Table 3-22 displays and compares deer supply and demand from harvest rates, hunter demand, and Alaska Department of Fish and Game (ADF&G) population objectives. Hunter demand was determined from ADF&G hunter questionnaires, and refers to the number of deer hunters would like to be able to harvest. ADF&G population objectives were developed as the number of deer the Department would like to have in each WAA.

3 Affected Environment

Figure 3-6 Map of Wildlife Analysis Area

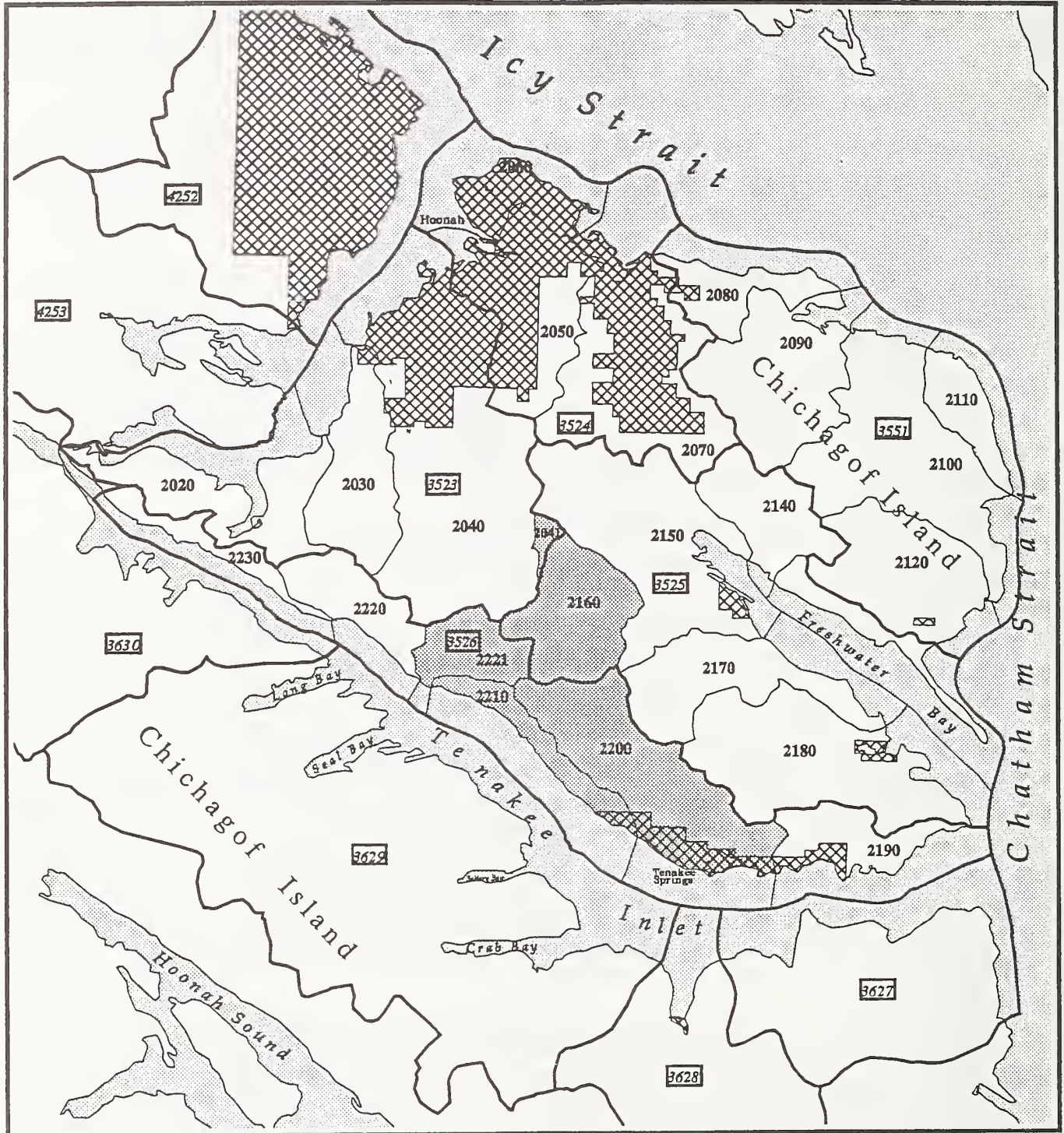


Table 3-22
Deer Supply and Demand, by Wildlife Analysis Area (WAA)

WAA	Mean # Deer Harvested from WAA Annually	Mean Habitat Capability to Maintain Harvest Rate *	Hunter Demand Harvest Level	Hunter Demand Habitat Capability *	1992 ADF&G Population Objectives	1996 Deer Habitat Capability **
3525	194	1,940	228	2,280	2,149	2074
3526	184	1,840	260	2,598	1,213	1480

Source: Shipley 1996

*Estimated habitat capabilities based on 10 times the harvest rate, in order to maintain sustainable harvest rate of 10 percent per year.

** Habitat capabilities estimated by the habitat suitability index model.

Currently, WAA 3525 appears to have sufficient habitat capability to maintain the mean deer harvest and ADF&G population levels, but not the hunter demand level. This indicates that, unless there is an event that seriously reduces deer populations (for example, severe winter or disease outbreak), there currently is no significant possibility of a significant restriction on subsistence uses in this WAA.

In WAA 3526, the current habitat capability and ADF&G population objectives appear to be in agreement. However, the estimated deer population (1,840 deer) needed to sustain the mean harvest rate (184 deer) in this WAA exceeds the estimated habitat capability by 20 percent. This indicates that a significant possibility of a significant restriction on subsistence uses may currently exist in this WAA. It should be noted that harvest levels in this WAA have been above habitat capability for many years, and there is no indication that overharvest is occurring. Harvest trends should be closely monitored to determine if in fact too many deer are being harvested from this WAA.

Competition

Communities were selected for inventory according to criteria suggested by J. Kruse (draft Guide to 810 Analysis, 1993). These criteria include:

- Deer constitute at least 10 percent of the total subsistence harvest of the community, and the community obtains at least 10 percent of the deer they harvest from WAAs associated with the proposed project. Table 3-23 displays communities harvesting deer in Project Area WAAs during 1990-1995. Appendix F displays the geographic extent of regional subsistence use for Southeast Alaska and community subsistence use maps.
- The community reports some use of the acreage of Project Area WAAs for marine resource harvesting. Appendix F displays these maps.
- The community has historically used the area. Goldschmidt and Haas (1946) identified the land-use patterns associated with Native communities that existed in the mid-twentieth century in Southeast Alaska. Comparing their maps with information from the 1987 Tongass Resource Use Cooperative Survey (TRUCS) maps and ADF&G Subsistence Division maps, it appears that hunting and fishing use by Natives in Southeast Alaska is still tied to some extent to historic traditions of who may hunt and fish on certain lands. Based on this work, historical clan hunting boundaries of the Angoon and Hoonah Tlingit are the only communities that have traditional use areas within the Project Area. (See Appendix F maps.)
- The community has gained increased access to the area for deer hunting as a result of new roads connecting the community to the harvest area, or roads connecting the harvest areas to a ferry terminal that could be used by the community.

Communities that best meet these criteria are Angoon, Hoonah, Juneau, and Tenakee Springs. Although not a rural subsistence community, Juneau is included in the inventory due to the large percentage of deer Juneau hunters harvest from Project Area WAAs and because of its access to the area via the ferry system.

Table 3-23
Communities Reporting Harvesting Deer in Project Area WAAs
During Regulatory Years 1990-1995

Community	Mean # Deer from WAA 3525	Mean # Deer From WAA 3526	Percent of Community's Deer	Mean # Deer From Project Area WAAs	Percent of Project Area WAAs Deer
Haines	0	3	<1	2	<1
Hoonah	60	0	10	8	6
Hyder	9	0	13	1	<1
Juneau	50	130	3	86	64
Kassan	1	11	4	7	5
Kennel Creek	14	0	67	2	1
Ketchikan	4	0	<1	1	<1
Laboucher Bay	4	0	3	1	<1
Other Alaska	4	4	N/A	3	2
Outside Alaska	<1	0	N/A	<1	<1
Petersburg	0	<1	<1	<1	<1
Sitka	12	3	<1	4	3
Skagway	1	0	7	<1	<1
Skow/Polk	4	0	2	<1	<1
Tenakee Springs	4	33	21	21	16
Tuxekan	0	<1	13	<1	<1
Whitestone	5	0	<1	<1	<1
Total	172	184	N/A	135	100%

Source: Shipley 1996

Note: Numbers are rounded to nearest whole figure. N/A = Not Applicable

Angoon Subsistence Use

Subsistence hunting and fishing are a vital source of food in Angoon and an important part of the lifestyle and culture. The average Angoon household derived 46 percent of its meat from subsistence harvests. Deer accounted for 31 percent of the subsistence harvest (ADF&G 1994).

ADF&G hunter survey data indicate that Angoon residents harvested no deer from the Project Area during the period 1990-1995 (Shipley 1996).

Hoonah Subsistence Use

In surveys reporting 1985 and 1987 harvest, 100 percent of 237 Hoonah households reported harvesting and using subsistence resources.

The average Hoonah household derived 50 percent of its meat from subsistence harvest, including approximately 93 pounds of deer. Deer accounted for 23 percent of the total subsistence harvest.

ADF&G hunter survey data indicate that Hoonah residents harvested a mean of 10 percent of their total deer harvest from the Project Area during the period 1990-1995. Harvest is reported in four of those five years. Annual harvest ranged from 0 to 13 percent during that time period. On average, Hoonah's harvest accounts for 6 percent of the harvest from Project Area WAAs. Harvest was reported only from WAA 3525 (see Appendix F).

Tenakee Springs Subsistence Use

All of Tenakee Springs' 47 households reported using subsistence resources in 1987.

The average Tenakee Springs household derived 42 percent of its meat and fish from subsistence gathering in 1987, including 135 pounds of deer. Deer comprised 39 percent of the subsistence harvest (Shipley 1996).

ADF&G hunter survey data indicate that residents of Tenakee Springs harvested a mean of 21 percent of their total deer harvest from the Project Area during the period 1990-1995. Harvest was reported in all five years. Annual harvest ranged from 10 to 32 percent during that period of time. On average, Tenakee Springs' harvest accounts for 16 percent of the deer harvest from Project Area WAAs. Harvest was reported in both WAAs 3525 and 3526.

Juneau Sport Hunting

ADF&G hunter survey data indicate that Juneau residents harvested a mean of 3 percent of their total deer harvest from the Project Area during the period 1990-1995. Harvest occurred in all of those years. Annual harvest ranged from less than 1 to over 7 percent during that period of time. On average, Juneau harvest accounts for 64 percent of the harvest from Project Area WAAs. Juneau residents report harvesting deer in both Project Area WAAs, with the majority of deer coming from WAA 3526 (Shipley 1996).

Access

The Project Area is accessed by boat, off-highway vehicles (ATV), foot travel, and occasionally by small truck. The City of Tenakee Springs is accessed by boat, floatplane, and the Alaska Marine Highway System.

See the Transportation section in this chapter for detailed information on roads accessing the Project Area. The gates on the Indian River Road (FS Road #7500) are not closed at this time. However, the Northeast Chichagof Controlled Use Area (which includes all of the Project Area) is closed by Federal Subsistence Board regulations to the use of any motorized land vehicle for brown bear hunting, or for the taking of marten, mink, or weasel. This restriction is in place to prevent over-harvest.

Tenakee Springs hunters travel an average of seven miles to their most reliable deer hunting areas. They are less likely to hunt in areas that include clearcuts of any age, roads, or areas above tree line. They are more likely to hunt in areas that include old-growth forest, muskeg, grassy meadows, or open beaches (Kruse and Frazier 1988).

NOTES

Recreation

The Project Area encompasses many of the natural recreation attraction features of Southeast Alaska, such as estuaries, mountains, large freshwater drainages, rocky shorelines with gravel beaches, and abundant wildlife and fisheries. The area has a developed recreation infrastructure in Tenakee Springs, with a road system, trails, Alaska Marine Highway and daily floatplane access, cabins, and recreational equipment rental businesses (boats, kayaks, bikes). (Nelson 1996.) Recreation features are displayed on maps in Appendix G.

The recreation resources of the Project Area are spread over approximately 61 square miles. The vegetation attractor is a mix of Sitka spruce, western and mountain hemlock, Alaska yellow-cedar, and red alder, with a small amount of black cottonwood. Blueberry, devil's club, and skunk cabbage are prevalent in the understory vegetation.

A portion of the Project Area is on non-National Forest System lands. All of the saltwater shorelines in the Indian River VCU (VCU 2200) are on land owned by either the State or the City of Tenakee Springs. (See Figure 1-3 for VCU boundaries.) This includes the Indian River estuary, located 1.5 miles east of the city. Twenty percent of the shoreline in the Whip Station VCU (VCU 2210) is also on State or City lands. Land owners in the area allow free use of their lands to recreationists, and provide entry onto the National Forest.

The existing recreation situation described in this section is derived from the following information sources:

- Home Range
- Recreation Opportunity Spectrum (ROS)
- Recreation Places, Activities, and Sites Inventories
- Road Management Objectives (RMO)
- Wild and Scenic Rivers
- Recreation Special Interest Areas
- Roadless Inventory
- Recreation Special Use Permits (SUP)

Recreation Use

The area within an approximately 15- to 30-mile radius of a community in Southeast Alaska is called the community's "home range" (see Glossary). The Project Area is within the home range of the City of Tenakee Springs. A ridge system and one air mile separate the town from the Indian River Road, which accesses the harvest area. All of the saltwater shorelines of the Indian River Project Area also lie within Tenakee Springs' home range.

Tenakee Springs has a population of 100 people (modified 1997 Forest Plan). Its residents consider their town to be distinctive because members have agreed to limit their personal freedoms to maintain a community lifestyle. Such limitations include prohibiting personally owned automobiles within the city, establishing set hours for using the natural hot-springs pool, and continuous dedication to remaining an isolated community on Chichagof Island. Tenakee Springs residents emphasize their uniqueness when advertising for tourism, because they feel the unusual sells well and generates more economic income to stabilize their community (Nelson 1996).

Table 3-24 displays recreation uses by residents and tourists of Tenakee Springs in the Project Area. The areas of saltwater adjacent to the Indian River and 10-Mile Creek estuaries are used for personal fishing (halibut, rockfish, salmon, snapper, crab, and shrimp) and whale watching. Pods of whales have been documented bubble feeding in these areas. Many different types of recreational boating also occur in these offshore zones (yachts, power boats, skiffs, and kayaks) (Nelson 1996).

Affected Environment

Portions of the East and West Tenakee Trails are within the Project Area, but located on City and State lands. These trails are an integral part of the recreation experience for residents and tourists. Trails are used as local transportation routes and for recreational walking or hiking, but also to access National Forest lands where many other types of recreation are experienced. Residents tend to use the trails in the winter, and tourists during spring, summer, and fall.

Besides the trail being a recreation attractor in itself, there are also a bear viewing area, a picnic shelter, and a number of waterfalls on or near the trail. The bear viewing area starts at the picnic shelter and the East Tenakee Trail bridge, and continues for 1.25 miles through a series of five waterfalls (Nelson 1996). The falls vary in width from 50 to 100 feet, and drop 42 feet in one mile, creating a visually exciting area.

Table 3-24

Recreation Uses by Tenakee Springs Residents and Tourists

Recreation Activity	VCU 2041	VCU 2160	VCU 2200	VCU 2210	VCU 2221
Indian River freshwater fishing			X		
Wildlife bear viewing			X	X	X
Subsistence and sport hunting		X	X	X	X
Mountain biking		X	X		X
Walking East Tenakee Trail and Indian River Road			X		
Walking West Tenakee Trail				X	
Berry picking			X	X	X
Cross-country skiing			X	X	
Natural food gathering			X		
Picnicking			X	X	
Karst exploration		X	X		X
Camping		X	X	X	X
Driving Indian River Road		X	X		X

Source: Nelson 1996

Recreation Opportunities

Recreation opportunities in the Indian River Project Area were inventoried using the Recreation Opportunity Spectrum (ROS). The ROS was developed by the Forest Service to analyze and describe various recreation experiences and is based, in part, on the extent to which the natural environment has been modified. (See Glossary for a complete definition of ROS.) ROS classes in the Project Area range from Semi-primitive Non-motorized (28,346 acres) to Roaded Modified (7,014 acres). In areas classified as Semi-primitive Non-motorized, a recreationist would have a high probability of experiencing solitude, challenge, and risk. On the other hand, a visitor to an area classified as Roaded Modified would find the landscape dominated by vegetation alterations from previous harvesting and roading, with little challenge or risk. See Table 3-25 and Appendix G, Recreation Existing Situation Map.

The ROS inventory is also applied using miles of shoreline on National Forest lands within the Project Area. This provides a baseline for changes in different types of recreation opportunities directly adjacent to saltwater. Whip Station and 10-Mile VCUs have nine miles of saltwater shorelines; pebble beaches in the area are steep, with little protection from stormy weather. Seventy-eight percent of the National Forest shoreline miles are classified as altered by harvesting, with the rest (22 percent) considered available for a Semi-primitive Motorized experience. Most harvest units have not been thinned and have closed canopies with trees 30 feet high (Nelson 1996). Textural differences still visually define these harvested areas from the rest of the forest. The recreation opportunities are limited within these stands because of the dense tree growth and residual slash.

Table 3-25
Project Area Acreage by Recreation Opportunity Spectrum (ROS) Classifications
(Acreages shown are National Forest land only)

ROS Class	Project Area NF Acres / % of total	VCU 2041* Acres / %	VCU 2160 Acres / %	VCU 2200 Acres/ %	VCU 2210 Acres / %	VCU 2221* Acres / %
Semi-primitive non-motorized	28,346 79%	750 100%	8,506 81%	12,043 81%	2,928 68%	4,119 78%
Semi-primitive motorized	392 1%	0	0	0	297 7%	95 2%
Roaded modified	7,014 20%	0	1,977 19%	2,901 19%	1,071 25%	1,065 20%

Source: Nelson 1996

* Partial VCUs.

Note: See Glossary for detailed definitions of ROS classifications.

Recreation Places and Recreation Sites

Recreation Places are areas that have natural characteristics that attract people. Recreation Sites are specific sites or facilities within a Recreation Place. (See Glossary for complete definitions.) Two Recreation Places totaling 3,545 acres, and five Recreation Sites are located within the Project Area (see Table 3-26 and maps in Appendix G).

The Indian River Road System Recreation Place (#31,120.01) follows the corridor of the Indian River Road from Sunshine Cove through the Indian River and Upper Freshwater drainages, and into the 10-Mile Creek drainage. The road was built for timber harvesting in the late 1970s, and now is the main attractor in this Recreation Place. Although 7 percent of the acreage in VCUs along the road system has been harvested, the area is still used for many different types of recreation activities.

The Sunshine Cove anchorage is one of four Recreation Sites in the Indian River Road System Recreation Place. This anchorage allows people to leave their boats in relative safety while they access the Indian River Road.

Travelers on the road from Sunshine Cove into the Indian River drainage can commonly view wildlife. Brown bear can be seen eating berries and grass along the road. Beaver ponds and the braided stream beds of the river are visible to the west, 3.5 miles from the coast. Much of the forest is at a climax stage, with snags and breakage common, and black cottonwood lending unusual variety to the forest background. This area gives the viewer an impression of meadows intermixed with small lakes. Impressive timbered, vertical cliffs are prevalent to the northeast, next to the road.

Besides viewing scenery, recreationists make use of dispersed campsites in this area. The existence of limestone throughout the area and a cave also provide the recreation opportunity for karst exploration.

Along the next eight miles to the north, bright green alpine scenery is frequently seen in the summer. The road climbs in elevation, crossing through passes to enter the 10-Mile Creek and Upper Freshwater Creek drainages. The area gives the viewer the feeling of an open, rolling landscape not often experienced in Southeast Alaska.

The southern slope of a large limestone mountain ("the Vortex") is an impressive landmark feature of the area that can be viewed from the road throughout much of the drainage.

Table 3-26
Project Area Recreation Places, Activities, and Site Inventories

Recreation Place No./ Local Name/ ROS Class	Activities	Sites
#31,120.01 Indian River Road System Roaded Modified (RM) 3,417 total acres VCU 2200: 1,714 acres VCU 2160: 1,124 acres VCU 2221: 590 acres	Viewing scenery and wildlife Riding motorbikes and ATVs Vehicle driving Hiking Bicycling Dispersed camping Big game hunting Nature study Freshwater fishing Picnicking Cross-country skiing Small game hunting Waterfowl hunting Gathering forest products Spelunking	VCU 2200: 1 Anchorage 1 Dispersed Camp Site 1 Cave VCU 2221: 1 Trail
#31,156.01 10-Mile Estuary Semi-Primitive Modified (SPM) 230 total acres VCU 2221: 128 acres VCU 2210: 33 acres	Viewing scenery Viewing wildlife Boating Viewing from marine access Hiking Canoeing/kayaking Freshwater fishing Saltwater fishing Beachcombing Dispersed camping Picnicking Big game hunting Small game hunting Nature study	VCU 2221: 1 Dispersed Camp Site

Source: Nelson 1996

Continuing west into the 10-Mile Creek drainage, the landscape changes from rolling to an impressive steep, rock-walled valley rising 2,800 feet in two-thirds of a mile. A year-round waterfall (vertical drop of 30 feet) can be seen from the road. An alpine trail has been located and inventoried in the pass area of 10-Mile Creek. Excellent salmonberry and huckleberry crops were observed in the existing northern harvest units. The alpine areas extend halfway down the mountainside, adding texture and diversity to the viewshed. An interesting karst feature occurs six miles west of the pass: a gray, limestone-walled canyon measuring 20 feet across and 30 feet deep, with a gravel bottom. The last bridge on the road system spans this ravine.

The 10-Mile Estuary Recreation Place (#31,156.01) is located 11 miles northwest of Tenakee Springs. There is a small, protected anchorage to the west of the Project Area that is used to access the dispersed camping sites in the area. A large beach area is associated with the estuary.

Road Management

The existing Road Management Objectives (RMOs) for the Project Area road system reflect a 1986 Road Order resulting from agreements made between the Forest Service and the City of Tenakee Springs. The Order closed the Indian River Road to vehicular traffic except for administrative use, commercial use by permit, or use by written authorization from the Sitka District Ranger. It was agreed that two gates would be installed, one at the first bridge on the Indian River Road and the other eight miles further north. This agreement has evolved unofficially to keeping the gates open, however, since the road system is not connected to any community and public vehicle use is rare.

Special Area Designations

The modified 1997 Forest Plan identified Special Interest Areas on the Tongass National Forest, and completed two required inventories: Roadless Areas and Wild and Scenic Rivers. No Special Interest Areas were identified within the Project Area. Inventoried Roadless Areas were considered for possible Wilderness designation. Portions of two Roadless Areas are included in the proposed sale area: Tenakee Ridge (21,722 acres) and Game Creek (35,740 acres). Neither of these was recommended for Wilderness designation in the modified 1997 Forest Plan.

The Project Area has three major streams: Indian River, 10-Mile Creek, and Freshwater Creek. During revision of the Forest Plan, none of these streams were found eligible for inclusion in the National Wild and Scenic Rivers System (1997 TLMP EIS, Appendix E).

Commercial Recreation Uses

The community of Tenakee Springs has been developing its tourist trade for years. Members focus on the remoteness of the community to provide a peaceful, wildlands experience. Their advertising emphasizes such recreation activities as soaking in the hot springs, walking, charter fishing, wildlife viewing, kayaking, mountain biking, and hunting. (See Table 3-27 for a summary of commercial recreation use and income.)

The Alaska Marine Highway schedules regular ferry service to Tenakee Springs. Passengers view a portion of the Project Area (the existing Sunshine Cove LTF and the upper slopes of the Indian River drainage) as they travel to and from the community. During 1995, the State ferries made 362 passes by the Project Area while carrying a total of 28,040 passengers (Alaska Marine Highway 1996). Tenakee Springs had 1,321 passengers disembark and 1,209 passengers embark. The month of November had the highest number of passengers and vehicles (boats, ATVs) disembarking for deer hunting. In 1995, the Alaska Department of Fish and Game reported 244 deer taken from Wildlife Analysis Area 3526 (the area surrounding Tenakee Springs). Juneau hunters harvested 77 percent of the deer taken from the WAA. (See the Subsistence and Wildlife Resource Reports for details.)

Three private fishing guides live in Tenakee Springs. Two of these were interviewed, and indicated that they serve 230 to 270 tourists each year, with 99 percent being from other States or nations (primarily from Europe and Japan). One guide family reported that they operate a fishing lodge four months of the year from Tenakee Springs; they ferry their clients to the fishing grounds each day. The other guide accommodates people on his boat for five months each year. Both use the Indian River bridge and falls for bear viewing and fishing about 13 percent of their time. They also use the saltwater immediately in front of the 10-Mile estuary for fishing. Their groups spend 153 to 192 days in the Inlet. (All day-use numbers in this report are generated from groups/day and not persons/day.)

The co-owners of the Tenakee Springs Mercantile, a complex which includes a grocery store, fuel dock and six cabins, had 880 people stay in their cabins in 1995, each staying an average of three days (Nelson 1996). This user group is from Juneau -- people taking a long weekend, or deer hunting in the fall. They spent a total of 587 to 1,172 group days in Tenakee Springs and the Inlet.

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The Tenakee Springs harbormaster reported 48 pleasure boats, averaging two people per boat, using the harbor in July and August in 1995 (Nelson 1996). A two-night stay was the average during these months, adding 96 days of group use to Tenakee Springs.

In Tenakee Inlet, viewing scenery is a popular recreation use. A number of groups view the Project Area (VCUs 2200, 2210, and 2221) from a small boat route designated in the modified 1997 Forest Plan as a Visual Priority Travel Route. (See the Scenic Quality section). These groups may or may not physically use the Project Area, but they generate recreation/tourism income while in the Inlet. A small cruise ship business uses Tenakee Inlet on an inconsistent basis, four to eight times a year for half-day excursions to the Upper Tenakee Inlet estuary (Nelson 1996). This equates to an average of six group days of use, but encompasses 70 people per group. The focus of these tours is education/natural history.

People renting yachts to tour Southeast Alaska also use Tenakee Inlet. The boats usually carry 10-15 people, staying a day in the Inlet. From June to August, the Inlet averages two yachts a week, for 24 group days (Schaefer 1996).

In 1995, 13 outfitters and guides (O/G) held Forest Service permits to use the Tenakee Inlet area. The Chatham Area 1995 Use Report Summaries for Outfitter/Guides (Nelson 1996) reported:

- five guides (three big game, one fishing, one sightseeing);
- 13 trips (ten big game, two fishing, one sightseeing);
- an average of 47 nights of group use (44 big game, two fishing, one sightseeing);
- an average of 32 people; and
- an average outfitter and guide income of \$82,900.

No Forest Service permitted outfitters and guides reported using the Indian River or 10-Mile Creek drainages, but their clients view portions of these drainages from saltwater.

An economic recreation/tourism analysis was completed by the Forest Service Sitka Office Recreation Planner in September 1996. The results are displayed in the table below. This information was collected through telephone conversations with various private businesses, the Tenakee Springs harbormaster, and Forest Service outfitter and guide records. All of these figures were taken from 1995 records (Nelson 1996).

Table 3-27
Commercial Recreation/Tourism Use and Income Summary

	In Tenakee Springs	Tenakee Inlet	Total
Average number of people willing to pay for recreation/tourism experiences	1,226/yr.	752/yr.	1,978/yr.
Average days of use by groups generating recreation/tourism income	1,248/yr.	74/yr.	1,322/yr.
Average total recreation/tourism income generated	\$562,300/yr.	\$176,950/yr.	\$739,250/yr.

Source: Nelson 1996

Potential Recreation Opportunities

Within the Project Area, there are possibilities to increase recreation opportunities and uses. A list of enhancement opportunities and proposed projects is included in Chapter 2. These were identified from three sources: personal conversation with Tenakee Springs residents, the Sitka Ranger District's recreation public scoping (March 1994), and the Sitka Office Recreation Planner (Nelson 1996).

Scenic Quality

Because of public concern about the quality of the visual environment, the “visual landscape” has been established as a basic resource of the land, and receives consideration along with the other forest resources.

Adopted Visual Quality Objectives

The modified 1997 Forest Plan established visual resource management goals to be implemented in each land use designation (LUD) of the Indian River Project Area (see Table 3-28). These goals are referred to as adopted Visual Quality Objectives (VQOs), and are derived from a combination of two factors:

- whether the area can be seen from a Visual Priority Travel Route and Use Area (modified 1997 Forest Plan, Appendix F); and
- the distance between the area being viewed and the viewer (also known as the “distance zones” -- foreground, middleground, and background).

Visual Priority Travel Routes and Use Areas. The modified 1997 Forest Plan identified priority viewpoints from which scenery will be emphasized. Viewpoints (either travel routes or use areas) are used to assess the existing visual condition of any given project area and to develop project designs that will be consistent with the adopted VQOs for each land use designation. The Alaska Marine Highway route and small boat route in Tenakee Inlet, and boat anchorages at Seal Bay and Long Bay (Tenakee Inlet) are Visual Priority Travel areas that are used to assess the existing visual condition of the Indian River Project Area.

Visual Quality Objectives. Visual Quality Objectives (VQOs) are described as five different degrees of acceptable landscape alteration:

Preservation (P) - Allows ecological changes only. Management activities, except for very low visual impact recreation facilities, are prohibited.

Retention (R) - Provides for management activities which are not visually evident. Activities may only repeat form, line, color, and texture which are frequently found in the characteristic landscape. Changes in their qualities of size, amount, intensity, direction, and pattern should not be evident.

Partial Retention (PR) - Provides for management activities to remain visually subordinate to the characteristic landscape. Activities may repeat form, line, color, or texture common to the characteristic landscape but changes in their qualities of size, amount, intensity, direction, and pattern remain visually subordinate to the characteristic landscape.

Modification (M) - Management activities may visually dominate the characteristic landscape. However, activities of vegetative and land form alteration must borrow from naturally established form, line, color, or texture so completely and at such a scale that its visual characteristics are those of natural occurrences within the surrounding area or character type.

Maximum Modification (MM) - Management activities of vegetative and land form alterations may dominate the characteristic landscape. However, when viewed as background, the visual characteristics must be those of natural occurrences within the surrounding area or character type. When viewed as foreground or middleground, they may not appear to completely borrow from naturally established form, line, color, or texture. Alterations may also be out of scale or contain detail which is incongruent with natural occurrences.

Table 3-28
Adopted Visual Quality Objectives, by Distance Zone
and Land Use Designation (LUD)

Land Use Designation	Adopted VQO (as seen from a Visual Priority Travel Route and Use Area)			
	Foreground	Middleground	Background	Not seen from Visual Priority Travel Route
Old Growth Habitat	Retention	Retention	Retention	Retention
Modified Landscape	Partial Retention	Modification	Modification	Maximum Modification
Timber Production	Modification	Maximum Modification	Maximum Modification	Maximum Modification

Source: Modified 1997 Forest Plan

Summary of Current Visual Condition by VCU

The visual environment of the Indian River Project Area, as seen by an observer along the Tenakee Inlet Visual Priority Travel Routes, is summarized as follows:

VCU 2041 - Game Creek

Only a small portion of this VCU along the southern boundary is included in the Project Area; it is unseen from Tenakee Inlet. No timber has been harvested from this portion.

The modified 1997 Forest Plan designates the portion of VCU 2041 in the Project Area as a Timber Production LUD (see Figure 1-2, in Chapter 1). As shown in Table 3-28, the resultant adopted VQO for unseen areas in this LUD is Maximum Modification.

VCU 2160 - Freshwater Creek

This VCU is made up of the Freshwater Creek drainage system, and does not have any saltwater shoreline. It also is unseen from Tenakee Inlet. A total of 607 acres within the VCU has been previously harvested.

The modified 1997 Forest Plan designates 80 percent of this VCU as Timber Production, with an adopted VQO of Maximum Modification (see Figure 1-2 and Table 3-28). Twenty percent of the VCU is designated as Old Growth Habitat, with an adopted VQO of Retention.

VCU 2200 - Indian River

This VCU surrounds the town and much of the township of Tenakee Springs. Indian River, flowing to the north of Tenakee Springs into Tenakee Inlet, carves a narrow linear valley with densely covered slopes running to the northwest from the town. The shoreline includes the western end of Tenakee Township to near Columbia Point, approximately 5.5 miles to the east.

Much of the foreground is comprised of the town of Tenakee Springs. Directly behind the town rises a large mountainous ridge in excess of 3,500 feet, covered predominately by soft textured alpine with strong dark green fingers of spruce and hemlock projecting upwards. Small communities of trees add color and texture to the steep slopes. The structure of the ridge is complex, with the ridge folding and undulating around large bowls, chutes, and deeply cut V-notches. Avalanche and landslide chutes provide strong line and color contrast within the bowls, while blocky limestone outcrops and snow-covered peaks contribute further interest.

Several unique grasslands and marshes are located along the lower extent of Indian River. The surrounding slopes are steep and cut by numerous V-notches, with blocky outcrops of limestone amidst a typical dense community of trees. Line, color, form, and texture are strong but typical of Chichagof Island.

Much of the valley floor and ridges in the background in the western portion of this VCU are unseen, being masked by larger, steeper slopes in the middleground. A total of 848 acres within the VCU has been previously harvested; the harvested area is unseen from Tenakee Inlet.

The modified 1997 Forest Plan designates a portion of this VCU as Old Growth Habitat LUD, with an adopted VQO of Retention. The majority of the VCU is Timber Production LUD, with an adopted VQO of Maximum Modification (see Figure 1-2 and Table 3-28).

VCU 2210 - Whip Station

This VCU quickly rises from sea level to elevations in excess of 2,500 feet within 0.75 miles, therefore making the foreground the dominant distance zone. The entire VCU is blanketed by native spruce and hemlock vegetation to an altitude of 2,000 feet. The slope is scored by deep V-notches, with occasional blocky outcrops with resurgences and cascading water. Much of the VCU is composed of the common characteristics found on Chichagof Island.

A total of 460 acres within the VCU has been previously harvested. Four individual timber harvest units are evident along the coast; however, sufficient regeneration of alder and small communities of hemlock and spruce reduces the textural and color contrast of these units.

The modified 1997 Forest Plan designates most of this VCU (94 percent) as Old Growth Habitat LUD, with an adopted VQO of Retention. Five percent is Timber Production LUD, with an adopted VQO of Maximum Modification. One percent (near 10-Mile Creek) is Modified Landscape, with an adopted VQO of Partial Retention in the foreground (see Figure 1-2 and Table 3-28). Exceptions for small areas of non-conforming developments in Partial Retention areas (such as log transfer facilities) may be considered on a case-by-case basis.

VCU 2221 - 10-Mile

Only about one-half of this VCU is included within the Project Area. The foreground is comprised of gently sloped topography with a minimal shoreline devoid of bays, inlets, and shore energy. Toward the rear of the VCU, the slopes take on a more prominent slope with cascading streams, geological blocky outcrops, and deep drainage swales above 1,000 feet in elevation. The peaks are rounded and devoid of tree vegetation. However, there is a contrast between the alpine vegetation and rocky profile of the higher elevations. A great deal of this partial VCU has been harvested and is in varying stages of regeneration.

The coastal portion is visible in the middleground, from anchorages across Tenakee Inlet at Long Bay and Seal Bay. Both anchorages are Visual Priority Use Areas. The upper portion of the 10-Mile Creek valley (eastern section of the VCU) is unseen and makes up approximately 74 percent of the partial VCU.

The modified 1997 Forest Plan designates the eastern portion of this VCU as Old Growth Habitat LUD, with an adopted VQO of Retention. The northern portion is Timber Production LUD, with an adopted VQO of Maximum Modification (see Figure 1-2 and Table 3-28).

Heritage Resources

Heritage resources are the human element of the environment, and include archeological sites, historic sites, and traditional properties. Traditional properties are areas of cultural importance that may not have left material evidence of use, while historic and archeological sites have tangible elements.

Ethnographic records indicate that the Indian River Project Area is within the traditional territory of the Xutsnuwu Kwaan (Angoon) tribe. Historically, Angoon territory included eastern Chichagof Island, and much of eastern Baranof and western Admiralty Islands. Within this territory, Tenakee Inlet belonged to the Wooshkeetaan clan. However, it was formerly claimed by the Deisheetaan clan and the rights were transferred as settlement for a murder, according to Native law. (See Appendix F maps.)

Although the beginning of the Historic Period is generally given as 1741, European presence was slight until 1774. From 1774 to 1795, ships from Russia, Spain, England, France, and the United States visited Southeast Alaska. Their arrival initiated dramatic changes in regional subsistence and land use patterns. Disease and conflict reduced the Native population; Russian settlements and forts were built; and trade of sea otter for European goods became important.

During the twentieth century, a variety of commercial and government ventures were undertaken in Southeast Alaska. Most notable were fox farms, mines, World War II military installations, homesteads, timber harvest, commercial fishing, and Civilian Conservation Corps projects. Evidence of these last four activities has been documented in the Project Area.

Recognizing that heritage resources are non-renewable, the Tongass National Forest has a program of identification, evaluation, and protection. This program is undertaken in accordance with the National Historic Preservation Act (Section 106), the National Environmental Policy Act, and applicable implementing regulations. In order to accomplish this task effectively, the Alaska Region heritage resource staff developed a regional research design (Autrey 1993) to guide investigations. This design defines two geographical zones for the occurrence of heritage resources:

- 1) High probability. This zone extends from sea level to the 100-foot contour, and also includes areas based on the following criteria: previous investigations, presence of myth and legend sites, isostatic rebound, anadromous fish streams, and mineral zones.
- 2) Low probability. This zone includes land above 100 feet in elevation that does not meet the criteria for high probability.

In 1975, prior to the development of this research design, a heritage resource inventory was conducted in the Project Area (Myron and Bower 1996). While a variety of field methods were used, all concentrated on the shore of Tenakee Inlet. These investigations identified four heritage sites: 49SIT048, 49SIT084, 49SIT167, and 49SIT181 (see Table 3-29).

Recent investigations for the Project Area using the regional research design were primarily conducted in the high probability zone, and identified eighteen more historic and prehistoric sites. The original study area for this project was much larger than the Project Area as eventually defined. Therefore, a larger area was surveyed and many more sites identified than are actually within the final Project Area boundary. Radiocarbon analysis of 11 midden samples found in these investigations indicates that sites vary in dates from 3,000 years ago to the Historic Period.

Table 3-29 Summary of Heritage Sites in the Indian River Project Area			
VCU	Site	Site Type	Eligibility
2200	49SIT468	+Trail	yes
2200	49SIT048	Petroglyph	#
2200	49SIT084	Community	#
2200	49SIT167	Burial	#
2200	49SIT181	Burial	#
2210	49SIT451	Machinery	no
2210	49SIT452	Machinery	no

Source: Myron and Bower 1995.
 # Non-Federal Lands; no determinations made
 + The trail lies on National Forest and non-National Forest land and extends beyond the Project Area boundaries.

Within the Project Area as finally defined, seven heritage sites were found. Table 3-29 lists these sites, as well as determination of eligibility to the National Register of Historic Places (NRHP). The determinations were made in the early stages of the planning process, in consultation with Federal agencies, Indian Tribes, State of Alaska Historical Preservation Office, and other interested parties.

These sites are important cultural heritage elements. Combined with other heritage resources on the Tongass National Forest, they contain information important to the study of cultural patterns (origins, spatial and chronological distribution, subsistence, technology) and environmental conditions (glacial sequences, sea level fluctuations, vegetation succession, faunal history).

Land Status

The Project Area contains the following alienated lands, encumbrances, use restrictions, and partial interests.

State, Municipal, and Private Lands

State, municipal, and private lands are not owned by the United States. The following State, municipal, and private lands are located within the Project Area (from USFS Land Status Atlas, Sitka D-4 (SW) and (SE) BLM Master Title Plats, T. 47 S., R. 62 E.; T. 47 S., R. 63 E.; and T. 47 S., R. 64 E.; CRM, and State of Alaska patents):

- State Selection AA-15077 (Tenakee Inlet) Tentative Approval of May 29, 1980, under authority of the Alaska Statehood Act of July 7, 1958 (P.L. 85-508), and Patent #50-82-0143.
- Various eliminations (including townsite eliminations), under authority of the Act of June 4, 1897.
- Various eliminations under authority of the Act of May 26, 1934.
- Various patents under authority of the Act of June 11, 1906.
- A July 28, 1930 elimination under authority of the Act of March 3, 1927.
- State of Alaska Tidelands Patent No. 321, granted by the State to the City of Tenakee Springs on September 29, 1982 for Tracts A and B of ATS 1050 at Tenakee Inlet, within Sec. 23, T. 47 S., R. 63 E., CRM. Tract A is 23.586 acres; Tract B is 6.612 acres. Patent is subject, in part, to a covenant that the lands shall be used for public purposes only, and any other use will result in reversion to the State.
- State of Alaska Patent No. 10649, granted by the State to the City of Tenakee Springs on August 11, 1989. Contains 204.83 acres within Secs. 21-23, T. 47 S., R. 3 E.; Secs. 17 and 20, T. 47 S., R. 64 E.; lot 4, USS 2450; and lot 10, USS 2451, CRM.
- State of Alaska Patent No. 6728, granted by the State to the City of Tenakee Springs on September 29, 1982. Contains 2810.26 acres within Secs. 12 and 13, T. 47 S., R. 62 E.; Sec. 7, 16-18, and 20-24, T. 47 S., R. 63 E.; Secs. 17-20, T. 47 S., R. 64 E.; lots 7-9, USS 2451; lots 10-14, USS 2452; and lot 17, USS 2453, CRM. Patent is subject, in part, to the reservation of a 20-foot-wide perpetual public pedestrian easement along the existing Tenakee Trail.
- State of Alaska Patent No. 6729, granted by the State to the City of Tenakee Springs on September 29, 1982. Contains 45 acres within Sec. 22, T. 47 S., R. 63 E., CRM. Patent is subject, in part, to the reservation of a 20-foot-wide perpetual public pedestrian easement along the existing Tenakee Trail. It is also subject to covenants that the City will continue to maintain the campground for public recreational purposes. Provisions are included for title to revert to the State upon the City's failure to do so.

State Selections

Section 6(a) of the Alaska Statehood Act of 1958 authorized the State of Alaska to select 400,000 acres of vacant and unappropriated land from within the National Forests of Alaska for furthering the development and expansion of Alaskan communities. The following lands within the Project Area have been selected by the State of Alaska under Statehood Act authority, but have not yet been conveyed by the Bureau of Land Management (BLM):

- There is a 22.72 acre parcel (USS 6855) of NFS lands which is selected by the State under State Selection AA-15077, located in Secs. 21 and 22, T. 47 S., R. 63 E., CRM.

Withdrawals

Withdrawals close lands to further entry under the Federal lands laws, Federal mining laws, or both. These withdrawn lands are set aside for specific purposes stated in the instrument that created the withdrawal. Incompatible uses are precluded, in accordance with the withdrawal language. The following withdrawals are located within the Project Area:

- A 0.50 acre Lighthouse Reserve, withdrawn indefinitely on February 13, 1921 by E.O. 3406, Item 78 (Grave Island), within Sec. 22, T. 47 S., R. 63 E., CRM (from USFS Land Status Atlas, 12/20/63, Sitka D-4 (SW) and BLM Master Title Plat, 11/17/93, T. 47 S., R. 63 E., CRM).

Rights-of-Way Acquired

These are rights-of-way acquired for public use and for Government administrative use of the Indian River Road #7500. Depending upon language within the applicable documents and type of grant, they may allow for construction, maintenance, use, reconstruction, or relocation of roads, trails, or other facilities. The authority to use, maintain, and improve the road is from the following sources:

- United States v. City of Tenakee Springs Final Judgment (Civil Case No. A86-630, Quiet Title), decided October 9, 1990, in the U.S. District Court, District of Alaska, and recorded in the Sitka Recording District in Book 91, pages 359-361. Quiets title in a 66-foot road easement in the United States, said easement located in T. 47 S., R. 63 E., CRM (portion of Indian River road on City of Tenakee Springs property).
- United States v. State of Alaska et al. Final Partial Judgment (Indian River Road, State Portion, Civil Case No. A86-630), decided August 7, 1987, in the U.S. District Court, District of Alaska, and recorded in the Sitka Recording District in Book 79, pages 798-803. Stipulation for Settlement which quiets a 66-foot easement in the United States for that portion of the Indian River Road located on State lands. Also includes an easement for a rock (gravel) borrow pit located in Sec. 15, T. 47 S., R. 63 E., CRM.

Transportation System

Roads

There are 23.2 miles of existing system road in the Indian River Project Area. These roads were constructed as part of previous timber sale contracts for the purpose of timber haul and administration. Table 3-30 displays miles of road for each VCU.

Table 3-30 Miles of Existing Road in the Project Area by VCU	
VCU	Miles
2041	0.0
2160	7.5
2200	11.8
2210	0.0
2221	3.9
Total	23.2
Source: Costa 1996.	

The existing road system begins at the site of the former Sunshine Cove LTF, about two and a half miles east of the Alaska Marine Highway dock at Tenakee Springs. The LTF is accessed from the Project Area by means of the Indian River Road #7500, which travels along the Indian River drainage across National Forest, State, and City of Tenakee Springs lands. The Federal Government holds rights-of-way for administrative use of the road across State and City lands.

Thirty-one log stringer bridges were surveyed on the existing road system in 1995, and none were found to be sturdy enough to permit log truck traffic (Mitchell 1995). After further review by fisheries specialists, it was determined that up to 24 of these bridges would need to be replaced. Culverts could replace the other seven bridges (Killinger 1996).

There is no road link between Tenakee Springs and the beginning of the Indian River Road. Instead, the road is accessed by the East Tenakee Trail (Forest Development Trail #553). The trail connects Tenakee Springs and the old cannery area located east of the city at Harley Creek, on the east shore of Tenakee Inlet.

Road Maintenance

The Forest Service Sitka Office Transportation Management System (TMS) report lists maintenance levels for the existing roads in the Project Area as follows:

- There are 20.4 miles of system road maintained at Maintenance Level 1. This level of maintenance allows for the road to vegetate naturally while drainage is maintained to keep the road bed from eroding. Drainage structures are either removed or kept open to allow cross drainage of the roadway.
- There are 2.8 miles of system road in the Project Area maintained at Maintenance Level 2. This level of maintenance allows for high clearance vehicle traffic. Drainage is maintained.
- No roads within the Project Area are maintained at Maintenance Level 3 or higher. These levels of maintenance would allow for passenger vehicle traffic.

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Road Density

Table 3-31 displays road density by VCU. Road density is computed by dividing miles of road by square miles of land area in the VCU. The 23.2 miles of existing road are spread over 61.0 square miles in the Project Area. This equates to an average road density of 0.38 miles of system road per square mile of Project Area.

Table 3-31 Road Density			
VCU	Existing Miles	Square Miles	Road Density
2041	0.0	1.2	0.00
2160	7.2	16.4	0.44
2200	12.5	27.7	0.45
2210	0.0	7.4	0.00
2221	3.5	8.3	0.42
Total	23.2	61.0	Average 0.38
Source: Costa 1996			

Logging Camps

There are no existing logging camps within the Project Area at this time. The closest existing facilities are at Corner Bay, located three miles south of the Project Area, on the southern shore of Tenakee Inlet.

Log Transfer Facilities and the Marine Environment

The marine environment for the Indian River Project consists of a 15-mile stretch of Tenakee Inlet, bordering the Project Area along the southern boundary of VCU's 2200, 2210, and 2220. Only nine miles of the shoreline is on National Forest land. The remainder is on State, City of Tenakee Springs, or private land.

One former and two proposed log transfer facility (LTF) sites have been identified in this project: Sunshine Cove, Sunny Too, and 10-Mile Creek (see Figure 3-7). All sites were investigated and inventoried by marine biologists in 1995 and 1996, to determine the existing condition of plant and animal species. The dive inventories identified 6 species of plants and algae, 25 invertebrate species, and 9 fish species at the former and proposed sites (Costa 1996). See Appendix K for dive inventories.

Sunshine Cove LTF Site.

The former Sunshine Cove LTF, located near the mouth of the Indian River, was built and used during previous logging activities in the Indian River, Freshwater, and 10-Mile drainages. Between 1977 and 1985, 57 mmbf of timber were transferred to saltwater at this LTF site. The site was last occupied in 1986. At that time, logs were placed directly into the water using an "A-frame" constructed on a log crib bulkhead. The log bundles were formed into rafts and moved either to Wrangell for processing into lumber, or to Sitka for pulp processing. The LTF is currently unusable. An engineering site survey of the existing facility would be needed to determine how much reconstruction or construction is needed to make it workable. The Forest Service has a Corps of Engineers (COE) permit for the bulkhead.

Previous studies indicate that bark can remain underwater at LTFs for long periods of time following LTF closure. During a 1996 investigative dive at the former Sunshine Cove LTF, measurements were taken for bark deposition and depth (Boes 1996). The current zone of bark deposition is approximately 1.25 acres, with 0.04 acres having a bark depth of 10 centimeters and more (Costa 1996). This meets the Alaska Timber Task Force LTF guidelines (see Appendix K).

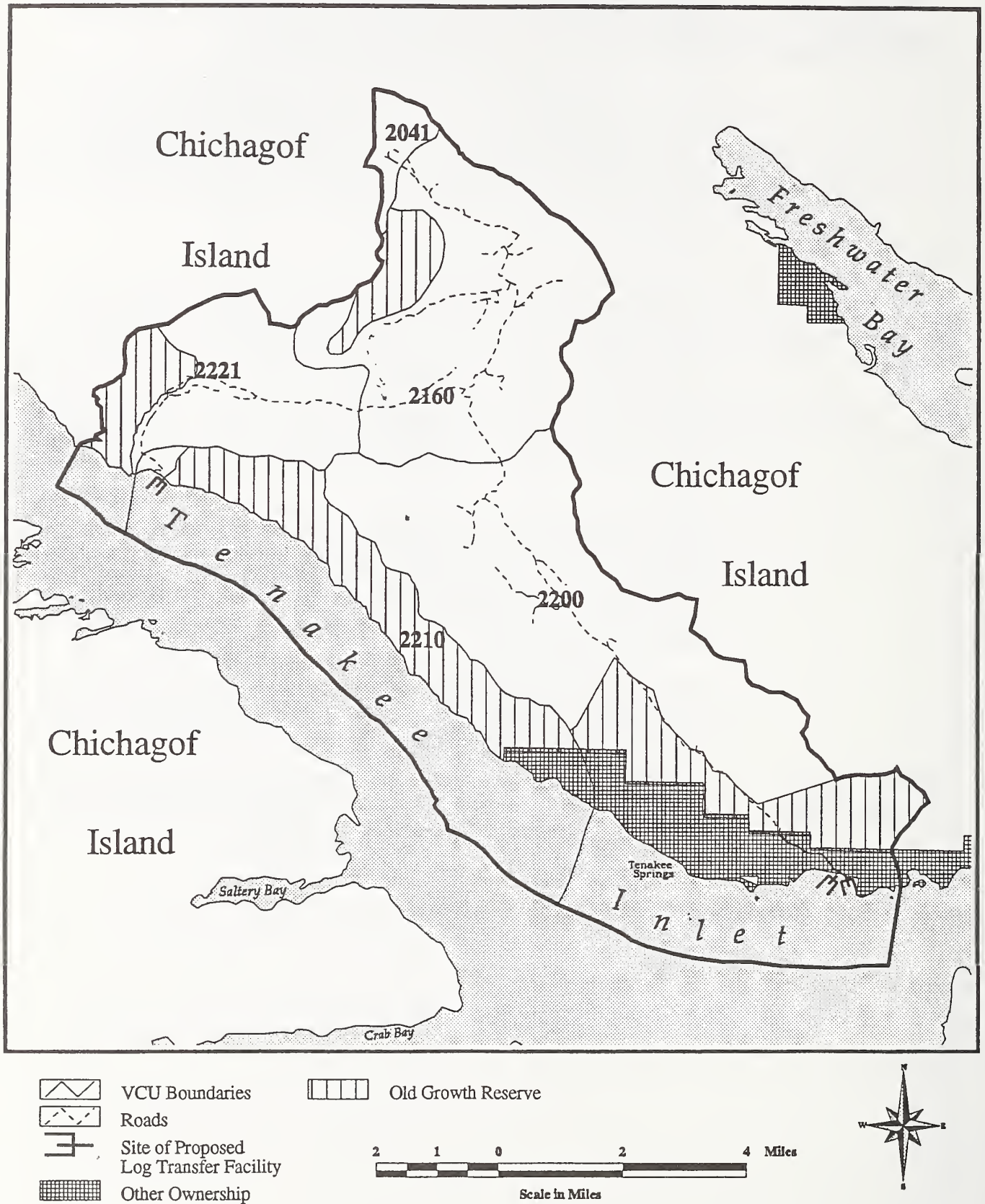
In 1982, the State of Alaska granted ownership of the tidelands on which the LTF is situated to the City of Tenakee. The Forest Service has an agreement with the City of Tenakee for reconstruction and use of this site, either as a drive-down ramp or a bulkhead.

Marine and Air Transportation

The Alaska Marine Highway connects Tenakee Springs with the communities of Southeast Alaska; Prince Rupert, Canada; and Bellingham, Washington. Small commuter airline companies out of Juneau and Sitka also serve Tenakee Springs.

3 Affected Environment

Figure 3-7 Indian River Project Area and LTF Locations



Economics and Social Values

The population in Southeast Alaska grew from 35,403 to 68,989 between 1960 and 1990 (an increase of 95 percent), with an average annual growth rate of 2.1 percent. The projected average annual growth rate for the 1990's is approximately 1.7 percent. At this rate, the population would increase to 81,756 by the year 2000. In 1960, the area's population accounted for 16 percent of the State population, while in 1990 this figure had dropped to 12 percent (Alaska Department of Labor 1992).

The lifestyles and social values of Southeast Alaska residents are diverse. Some choose to live in the region because of the opportunity to participate in the commercial fishing, timber, mining, and recreation industries. Others desire the lifestyles afforded by remote, uncrowded living situations and the opportunity to be close to their families and friends. Still others choose to remain in Southeast Alaska because of the hunting, fishing, recreation and subsistence opportunities, and the chance to live in close proximity to a natural, unmanaged environment. Many Native Alaskan residents remain attached to Southeast Alaska because it provides an important link in the practice of traditional customs and in the preservation of their cultural heritage.

Such great diversity in attitudes, beliefs, values, and lifestyles suggests that the proposed Indian River project would have both positive and negative effects on the people of the region. Many Southeast Alaskans want to keep that which makes their part of the world unique. At the same time, they also want to maintain their economic livelihood (USDA Forest Service 1990). In reality, the resource base is limited, which makes it increasingly difficult to resolve conflicts between quality of life and economic security.

A high percentage of Southeast Alaska residents derive their livelihood from jobs or other activities that in one way or another are tied to the Tongass National Forest. Most also participate in a wide variety of personal activities which depend upon the forest. Resource management actions in the forest such as are proposed in the Indian River project have the potential to impact every community in the region.

For example, the economic and social life of Hoonah and Ketchikan is tied to logging and related industries; these towns would be affected by changes in the National Forest timber supply. Angoon, Hoonah, and Tenakee Springs rely on commercial fishing as their primary economic support, and could be affected by changes in the quantity and quality of fish and fish habitat. The economic foundations of Tenakee Springs (and to a lesser extent, Sitka, Gustavus, and Juneau) depend on recreation and tourism; changes in the pattern of recreational opportunities and visual qualities of the forest would have an economic affect. Angoon, Hoonah, and Tenakee Springs also benefit from nearby subsistence opportunities, and could be affected by changes in the availability of large and small game, fish, berries, and firewood.

In summary, all of the various resources in the Tongass National Forest are central to maintaining stability of life and overall social health of the region. Careful management is vital. As discussed above, however, community stability is quite difficult to quantify in Southeast Alaska, due to the many variables that may influence it. Employment levels, incomes, receipts, and multipliers do not give the entire picture, particularly with respect to quality-of-life aspects. Nevertheless, a balance created by having a variety of natural and human-related resource activities is key. Such equilibrium is significant as it prevents exploitation of any one resource, and ensures the availability of these resources for all the communities in the region, now and in the future.

Regional Perspective

Southeast Alaska is the primary area of influence for the Indian River Project, with respect to the economic environment. This geographic region extends roughly 500 miles from Ketchikan in the southeast to Yakutat in the northwest, and is mainly unpopulated, wild country. Nearly 80 percent of the region is located within the Tongass National Forest, the largest forest in the National Forest System. The region's population of 69,000 people is divided among 33 cities, towns, and villages located within, or very near, the National Forest boundaries.

Settlements in Southeast Alaska range in size from one person living near a sheltered bay to more than 28,000 people living in a full-service community. Although some communities are on Forest road systems, most settlements are accessed primarily, if not exclusively, by aircraft or boat. This relative degree of remoteness, combined with the considerable scenic and recreation opportunities provided by the Tongass National Forest, is sought by many wanting a more self-reliant lifestyle. Residents are often quick to point out that the quality of life found in Southeast Alaska outweighs the possible disadvantages of seasonal employment, lack of jobs, cost of importing goods and services, transportation, and weather.

Most communities in the region are characterized by a dependence on one or more natural-resource-based industries including: wood products, commercial fishing and fish processing, tourism and commercial recreation, mining, and mineral development. Government (especially in Juneau), transportation and educational services are also significant income sources. Residents of the numerous small, rural communities also depend heavily on subsistence fishing and hunting to meet their basic needs. The following sections provide an overview of the regional economy and the three communities in close proximity to the Project Area. (See Table 3-32.)

A mix of employment growth and decline is projected for Southeast Alaska in the near term. Gains are expected in the mining industry following the reopening of the Greens Creek Mine on Admiralty Island. Construction employment is expected to increase in response to a number of residential and public works projects. As visitation to Southeast Alaska continues to increase, so too does employment in the services and retail trade sectors of the economy. The commercial fishing industry is expected to continue to play a large role in the economic picture. (See Tables 3-32 and 3-33.)

Some declines, however, are expected to temper the gains in these industries. Reduced logging activity is expected and will result in fewer jobs. The outlook for the government sector is also bleak as budget concerns are expected to lead to job cuts. In the fishing industry, a newly implemented "individual quota shares" (IFQ) system for some commercial species is expected to reduce the number of seasonal and short-term processing and fishing crew positions.

Additional economic information may be found in other sections in this chapter.

Table 3-32
Southeast Alaska Wage and Salary Employment
1995 and 1996 Forecast

	Annual Average Employment 1995	Forecasted Annual Average Employment 1996	Forecasted Change from 1995 to 1996
Goods Producing			
Mining	200	350	150
Construction	1,600	1,700	100
Manufacturing	3,950	3,775	-175
Seafood Processing	1,600	1,550	-50
Forest Products *	2,050	1,925	-125
Subtotal	5,750	5,825	75
Service Producing			
Transportation	2,950	3,000	50
Trade	6,700	6,900	200
Wholesale	550	550	0
Retail	6,150	6,350	200
Finance, Insurance, and Real Estate	1,400	1,425	25
Services and Misc.	6,600	6,850	250
Government	12,350	12,275	-75
Federal	1,950	1,900	-50
State	5,400	5,325	-75
Local	5,050	5,050	0
Subtotal	29,950	30,450	500
Total	35,700	36,275	575

Source: Alaska Department of Labor 1996.

* Includes pulp mills and lumber and wood products.

Table 3-33
Tenakee Inlet and Freshwater Bay Fisheries

Salmon*	Average Number per Year (1985-1995)
Chinook	91
Chinook Jack	218
Coho	1,946
Sockeye	2,768
Pink	602,207
Chum	102,360
Groundfish	Average Pounds per Year (1987-1995)
Demersal Shelf Rockfish	596
Pacific Cod	2,908
Other Rockfish	100
Invertebrates	Average Pounds per Year (1985-1995)
Dungeness Crab	64,532
Tanner Crab	41,954
Brown King Crab	1,733
Blue/Red King Crab	**8,689
Shrimp	12,792
Sea Cucumbers	***31,995

Source: Alaska Department of Fish & Game 1995

* Because trollers do not report by sub-district, data for salmon caught in the troll fishery in Tenakee Inlet/Freshwater Bay are not available and therefore not included in this table.

** 1993 through 1995

*** 1989 only

Community Profiles

Following is information about nearby communities most likely to be affected by the action alternatives. Most of this information is from the 1997 TLMP EIS (USDA Forest Service 1997a). Comments displayed here were part of a non-random, self-selecting sample; therefore they may not necessarily reflect community opinion.

There are three communities near the Indian River Project Area. Angoon is approximately 22 miles to the southeast; Hoonah is about 22 miles to the north; and Tenakee Springs is within the project boundaries. Residents of Hoonah and Tenakee Springs are likely to visit the area for hunting, fishing, subsistence, or recreational purposes. Angoon residents are less likely to visit. Bear hunting guides from other Southeast Alaska communities have permits to use the Project Area during hunting season. Timber sales from within the Project Area would be available as part of the independent sale program; a number of communities in the region have logging firms that could be employed in this timber harvest activity. Several communities also have wood processing facilities that would likely utilize this timber.

Angoon

Angoon has a population of approximately 600. Employment is highly seasonal in all sectors of the town's economy, and the unemployment rate persists at around 10.6 percent throughout the year. The 1990 median household income was \$32,083 (USDA Forest Service 1997a). Problems with unemployment are compounded by the high cost of living in a remote area. Many residents are commercial hand trollers; commercial fishing is a major source of revenue to the community. The Chatham School District is also a primary employer. Logging camps in the vicinity occasionally provide additional employment opportunities. Subsistence hunting and fishing are vital food sources, as well as an important part of the residents' lifestyle and culture.

During the TLRMP Revision process, people in Angoon expressed a desire to see more emphasis placed on scenic resources, recreation, fish, wildlife, and subsistence. While some communities in the area of the Tongass have expressed the need to reduce logging to maintain tourism and commercial fishing, the people in Angoon simply want to maintain their traditional and healthy food supply. They do not want additional roads and log transfer facilities, nor do they want to be connected to other roads. They emphasized the importance of subsistence to the community and pointed out the detrimental changes to their traditions since Caucasians came to the area 250 years ago. They are concerned with the high unemployment rate of Angoon, and stress the need for subsistence resources in this regard.

Hoonah

Hoonah has a population of 903. Fishing and fish processing, timber, and the retail trade are the primary sectors of the economy, with all sectors being highly seasonal. Hoonah has a median household income of \$36,442 and an unemployment rate of 10.6 percent throughout the year (USDA Forest Service 1997a).

People in Hoonah indicated that their opinions are split regarding the harvest of timber along Alaska Marine Highway routes, roads, streams, and around their community. Half of them want more emphasis on recreation, and half are satisfied with the current mix of emphasis. They want additional emphasis placed on fish and on old-growth habitat near the town. The Hoonah City Council requested additional emphasis on subsistence resources. Other individuals want the current timber sale program to continue, and believe the Forest Service has an obligation to maintain local and regional economics. Still others said they want the current amount of logging reduced. They want more provisions for short-term or small business sales, stating that these are better for the future of the industry.

They want the tourism, recreation, and fishing economic sectors emphasized. Some favor additional roads and log transfer facilities, and encourage connecting existing roads. (Note: the Tongass Timber Reform Act prohibits Department of Agriculture construction of any access road between Hoonah and Tenakee Springs or any other logging road system on Chichagof Island, unless the city councils of the two communities decide the roads should be built.)

Huna Tribal Council and other Native Alaskans are concerned with the effects of additional logging on wildlife and subsistence uses, and on traditional use areas.

Tenakee Springs

Tenakee Springs has a population of 111 residents. It is a popular "get-away" area and favorite stop for boaters. A number of Juneau residents maintain second homes there. The 1990 median household income was \$18,125. Unemployment in 1994 for this census area was 10.6 percent, compared to 8.2 percent throughout Southeast Alaska. The major employers are a highly seasonal fisheries and retail trade, and local government (USDA Forest Service 1997a).

Proposals for logging in areas close to Tenakee Springs have raised local interest, sentiment, and debate about what mix of values the forest should provide. Some people support a sustainable timber industry to diversify the economics of the local communities. At the same time, there is considerable opposition to clearcut logging in an area considered to be in Tenakee Springs "backyard." Most, if not all, of the Project Area appears to lie within that area of concern. At the heart of the debate is a sincere and strong desire on the part of most people in the town to maintain their current lifestyle.

Tenakee Springs residents and the City of Tenakee Springs want to see more emphasis placed on scenic resources, recreation, fish, wildlife, and subsistence. They want the current timber sale program reduced. They do not feel that jobs should be the reason for making forest use decisions. Neither residents nor the City want additional roads, log transfer facilities, or connection to existing roads. They feel that more roads mean more hunter access and fewer deer. They are opposed to emphasis on mining exploration and development, and favor additional Wilderness designation. They want the Forest Service to emphasize tourism, wildlife, recreation, and subsistence sectors of the economy. Both the City and Tenakee Springs Fish and Game Advisory Committee are concerned with the current and projected future declines in wildlife habitat capability in the area, especially along Tenakee Inlet.

Timber Receipts and Payments

In accordance with Federal law, 25 percent of the money collected from the use and sale of National Forest products and services is returned to the state from which those revenues originate. Sources include receipts from timber sales, mining, recreation fees, and special use permit fees.

In 1996, total Tongass and Chugach National Forests receipts were \$23,622,080. Based on this figure, payments to the State of Alaska in fiscal year (FY) 1997 were \$5,905,520.

These 25-percent funds are dedicated to public schools and roads. Disbursement is controlled by each state according to its own laws and regulation. In most states, the money is returned to counties in proportion to the receipts generated within each county. In Alaska, funds are distributed instead to organized boroughs based on National Forest acreage within each borough. The organized boroughs in the Northern Tongass received the following amounts in FY 1997: Haines, \$321,716; Juneau, \$601,953; Sitka, \$634,274; and Yakutat, \$430,778.

Money is also distributed to cities and schools located within National Forests, but outside of organized boroughs; distribution is based on miles of road each city maintains and student enrollment in each school system or Regional Education Attendance Area (REAA). Because of Alaska's disbursal method, the amount of money a community receives does not depend directly upon the timber or other receipts generated in its borough. See Table 3-34 for FY 1997 National Forest payments to unorganized boroughs in the Project Area vicinity.

Table 3-34
FY 1997 National Forest Payments to Communities Near the Project

Community	Road Miles	Road Mile \$	Number of Students	School \$	Total Payment
Hoonah	8.00	\$19,352	271	\$195,073	\$214,425
Angoon	7.70	\$18,626	146	\$105,095	\$123,721
Tenakee Springs	2.50	\$6,048	16	\$11,517	\$17,565

Sources: Alaska Dept. of Community and Regional Affairs 1997, and Alaska Dept. of Education 1997.

* Schools in Tenakee Springs and Angoon receive funding through the Chatham REAA. National Forest payments are distributed to eligible city school systems and REAAs at the same \$/student rate, approximately \$919.83 per student in 1997.

Chapter 4

Environmental Consequences

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Chapter 4

Environmental Consequences

Overview

This chapter describes the environmental consequences of the six project alternatives presented in Chapter 2. Environmental consequences are the effects an alternative would have on the physical, biological, social, and economic environment. These effects may have consequences that are both beneficial and detrimental. Effects are quantified where possible, although qualitative discussions are often necessary. All significant or potentially significant environmental consequences are disclosed here, including the direct, indirect, and cumulative effects on the resources discussed in Chapter 3.

Analyzing Effects

Direct, Indirect, and Cumulative Effects

Direct effects are defined as those caused by an action and occurring at the same time and place as the action [40 CFR part 1508.8 (a)]. For this project, the time period during which direct effects are expected to occur in the Project Area is from the expected initiation of harvest activities (year 2000) to the expected completion of those activities (year 2003).

Indirect effects are those caused by an action, or those occurring later in time or farther removed in distance, but which are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems [40 CFR part 1508.8 (b)].

Cumulative effects are the impacts on the environment which result from the incremental impacts of an action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time [40 CFR part 1508.7].

Cumulative effects analyzed for the Indian River Project include the effects of the large scale logging that has taken place since 1956 when the Forest Service entered into a 50-year contract with the Alaska Pulp Corporation (APC). The analysis also considers actions undertaken or planned as a result of planning schedules for the Finger Mountain and Otter Lake projects, or the Record of Decision (ROD) for the Eight Fathom timber sale project. Harvest activities on non-National Forest lands are also considered.

For most resources evaluated in this project, the area in which cumulative effects are expected to occur is Northeast Chichagof Island. However, the analyses of certain resources required considering a different geographical area of influence. For example, Tenakee Inlet was the area used in analyzing the direct, indirect, and cumulative effects of the alternatives on the recreation and scenic quality resources.

Longer time frames were used to evaluate the cumulative impacts of the alternatives on the wildlife and subsistence resources in the Project Area. For these resources, analysts used the period from 1998 through 2050 to study closed canopy effects on habitat. Information from the modified 1997 Forest Plan FORPLAN (see Glossary) was used to project timber harvest beyond the year 2010.

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Assumptions: Reasonably Foreseeable Effects

The following assumptions were made to assess reasonably foreseeable effects. These assumptions reflect current technology and management of National Forests and provide a uniform approach to estimating effects of timber harvest and road construction.

- Laws, standards and guidelines, and Best Management Practices (BMPs) for resource protection would be followed. These requirements are expected to be at least as stringent in the future as they are today.
- Timber sale planning would occur in an interdisciplinary fashion.
- Timber harvest can occur anywhere on suitable productive forest land.
- The no-action alternative would represent only a delay in implementing the modified 1997 Forest Plan and, based on volume projections, this Project Area would be rescheduled in the ten-year plan.
- Future effects on resources from timber harvest and road construction would be similar to impacts projected for current alternatives.

Other Environmental Considerations

Chapter 4 concludes with other environmental considerations that must be addressed under the National Environmental Policy Act (NEPA) but do not fall under the categories discussed in Chapter 3. These topics include:

- unavoidable adverse environmental effects;
- the relationship between short-term uses and the maintenance and enhancement of long-term productivity;
- the irreversible and irretrievable commitments of resources;
- possible conflicts between the proposed action and the plans of other jurisdictions; and
- other environmental considerations.

Many adverse effects would be reduced or mitigated by limiting the extent or duration of effects. Specified mitigation measures for project activities would be implemented in the alternatives within standards and guidelines. Mitigation measures are discussed in this chapter, in Appendix C, and in the road and unit cards (Appendices I and J).

Geology, Minerals, and Caves

Direct, Indirect, and Cumulative Effects

Mining and Minerals

Implementation of any one of the action alternatives would have limited or no direct or indirect effect on the minerals and geology resources within the Project Area. There would be no effect to the locatable and leasable mineral resources because there are no known or suspected deposits on National Forest land in the Project Area.

Less than ten miles of new road would be constructed and less than 25 miles of existing road would be reconstructed in any alternative. A relatively small quantity of fill and shot rock (salable minerals) would be extracted from existing or new rock quarries for this work, and for the development of log transfer facilities (LTFs). Existing rock quarries are displayed on the Alternative maps. Potential rock quarry sites were observed during field reconnaissance. The estimated volume of rock required for development is summarized by alternative in Table 4-1.

The direct, indirect, and cumulative effects of developing rock quarries include potential water quality impacts and the irreversible loss of less than five acres of wildlife habitat. Best Management Practices (BMPs) have been designed to reduce potential short-term water turbidity and minor increases in sedimentation rates (BMP 14.18) to acceptable levels. The loss of less than five acres of wildlife habitat is not expected to result in the listing of any species, nor is it expected to cause loss of species viability.

Table 4-1 Summary of Estimated Rock Needs by Alternative	
Alternative	Estimated Rock Volume (cubic yards)
A	0
B	103,000
C	120,000
D	110,000
E	111,000
F	135,000
Source: Costa 1997	

Effects on Cave Resources

Caves

The purpose of the Federal Cave Resources Protection Act of 1988 (FCRPA) is to secure, protect, and preserve significant caves on Federal lands for the perpetual use, enjoyment, and benefit of all people. There is one designated significant cave in the Indian River Project Area. This significant cave (as defined in the FCRPA and 36 CFR 290) will be protected and its specific location will be kept confidential.

A timber harvest unit included in all of the action alternatives is located within a quarter mile of this cave. There is no evidence to indicate that surface or sub-surface water flowing from this unit contributes to the development of the cave. Dye tracings indicated that water flowing underground that could contribute to development of this cave occurs at higher elevations than the harvest unit. In addition, the unit would be helicopter yarded in all alternatives, reducing the possibility of soil disturbance that could impact water quality and other agents of cave formation.

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Karst Resources

Direct, indirect, and cumulative effects on karst resources resulting from management activities include water quality impacts such as sedimentation, and re-routing the flow of water away from the karst system. On karst lands, fissures on the surface of the ground become injection points into a more complex subsurface drainage system. These fissures rapidly move water and sediment delivered from surface sources vertically downward into underground lateral systems. Sediment and water transported from roads and disturbed lands such as harvest units may emerge unexpectedly at one or more distant springs, even across surface watershed boundaries (modified 1997 Forest Plan, USDA Forest Service 1997).

Specific karst management objectives are provided in the modified 1997 Forest Plan to protect karst resources and minimize impacts from planned activities such as timber harvest. These objectives are grouped by karst vulnerability classification (low, moderate, and high), with increasingly stringent measures applied to moderate and high vulnerability karstlands. Potential impacts from the timber management proposed in the action alternatives would be avoided by following the karst management objectives, as well as BMPs designed to maintain water quality and free flow of water.

All of the action alternatives include timber management activities on areas assessed by geology consultant, Harza Northwest, Inc., as having low and moderate karst vulnerability. The majority of these activities, however, would not occur on or near karst features.

Some small segments of new road construction will cross areas mapped as high vulnerability karst. These segments were located in these areas because no other route was available (modified 1997 Forest Plan, Appendix I, page 15).

The unit cards in Appendix J include instructions to notify the Forest Geologist if karst features (for example, caves, springs, and disappearing streams) are located during unit layout and harvest. Additional analysis would then be done to further determine levels of karst vulnerability and appropriate protection measures.

Timber management activities are currently planned in the Eight Fathom Timber Sale(s) Project to the west of the Project Area. Additional timber management activities are scheduled to be planned on northeast Chichagof Island (Iyouktug Timber Sale Project) to the north. Because road and facility construction are planned or would be planned as part of these projects, there would be additional demands for common variety mineral resources and impacts associated with opening rock quarries.

Interest has been shown in developing an open pit limestone quarry in the Kennel Creek drainage. If this proposal were implemented, additional environmental analysis (including cumulative impacts) would be conducted.

No known cave resources have been directly affected by past timber harvest and road construction in the Project Area. Adherence to BMPs and standards and guidelines in implementing future activities would prevent effects to cave resources. Consequently, long-term cumulative effects to cave resources are expected to be minimal.

Other Cumulative Effects

Soils, Water, and Fish

Direct, Indirect, and Cumulative Effects

This section describes the direct, indirect, and cumulative effects of the proposed Indian River Timber Sale(s) on the combined resources of soil, water, and fish, as well as riparian areas and wetlands in the Project Area. Further discussion of effects on riparian areas and wetlands is included in the Vegetation section in this chapter. Potential impacts to fish habitat and water quality could be caused by:

- catastrophic events such as landslides or blowdown;
- sediment from roads;
- short-term changes in the magnitude and frequency of stream discharge due to interception of ground water flow by road cuts;
- consolidation and redirection of flows by road drainage structures; and
- blockage of fish passage by drainage structures.

Management direction and guidelines in the modified 1997 Forest Plan, Best Management Practices (BMPs), and Indian River Watershed Analysis (IRWA) provide a strong level of environmental protection, which minimizes the risk of such impacts. Specifically, the following measures would minimize risks:

- Maintain buffers on Class I, II, and III streams as directed in the modified 1997 Forest Plan and recommended in the IRWA.
- Avoid steep, unstable slopes; prescribe harvest methods and road construction techniques that minimize the risk of slope failure.
- Avoid road construction in high-value wetlands, such as rich fens.

Since these guidelines were incorporated in the design of this project, none of the alternatives would have a significant effect on fish habitat or water quality.

Other, more specific measures to protect soil, water, and fisheries resources are described in the road and unit cards (see Appendices I and J). These are based on the IRWA (Paustian et. al, 1996) and site analysis done for this project. While some of these measures may differ from the modified 1997 Forest Plan Standards and Guidelines, the Forest Plan allows for such adjustments if a watershed analysis has been done.

Soils and Water Quality

Impacts to water quality from the action alternatives would be in the measurable form of increased levels of sedimentation, changes in chemical water quality, stream water temperatures, and stream flows.

The State of Alaska, which is responsible for developing and enforcing the Clean Water Act, has determined that the reasonable implementation, application, and monitoring of BMPs can effectively maintain water quality (USFS, 1996a). BMPs minimize the risk of accelerated sedimentation by avoiding or protecting the areas of highest risk and concern. In planning the roads and harvest units for this project, GIS database information and field-gathered data was used to identify and avoid or protect these areas. (See the road and unit cards in Appendices I and J for specific applications of BMPs and other mitigation measures.) The highest risk areas have been avoided by:

- eliminating areas rated as extreme mass movement hazard from consideration for harvest or road construction;
- deleting units or roads after field review indicated they were located in areas that should be rated as extreme mass movement hazard soils;

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- adjusting unit boundaries or road locations to avoid small areas or inclusions of extreme mass movement hazard soils; and
- avoiding new road construction in these areas by selecting helicopter harvest systems.

Areas of high concern within the Project Area are further protected by prescribing the following practices:

- selecting harvest prescriptions that leave many trees in the unit to help maintain soil stability, such as group selection or overstory removal;
- selecting harvest systems that minimize ground disturbance, such as helicopter or full or partial suspension cable systems;
- using road construction techniques on steep slopes that minimize the effects on slope stability, such as partial or full bench construction;
- designing and installing road drainage structures that minimize sedimentation; and
- designing and sizing stream buffers to minimize risks of windthrow and slope failure.

Comparison of Sedimentation Risk by Alternative

A sediment risk analysis model developed by Geier and Loggy (1995) was used to predict the relative risk of sediment production for each alternative. The model takes into consideration both natural conditions (stream density, sub-basin area, and soil characteristics) and management activities (harvest acres, logging systems, road miles, and stream crossings per mile of road).

In order to evaluate the significance of the changes in sediment risk for each alternative, the following factors were considered:

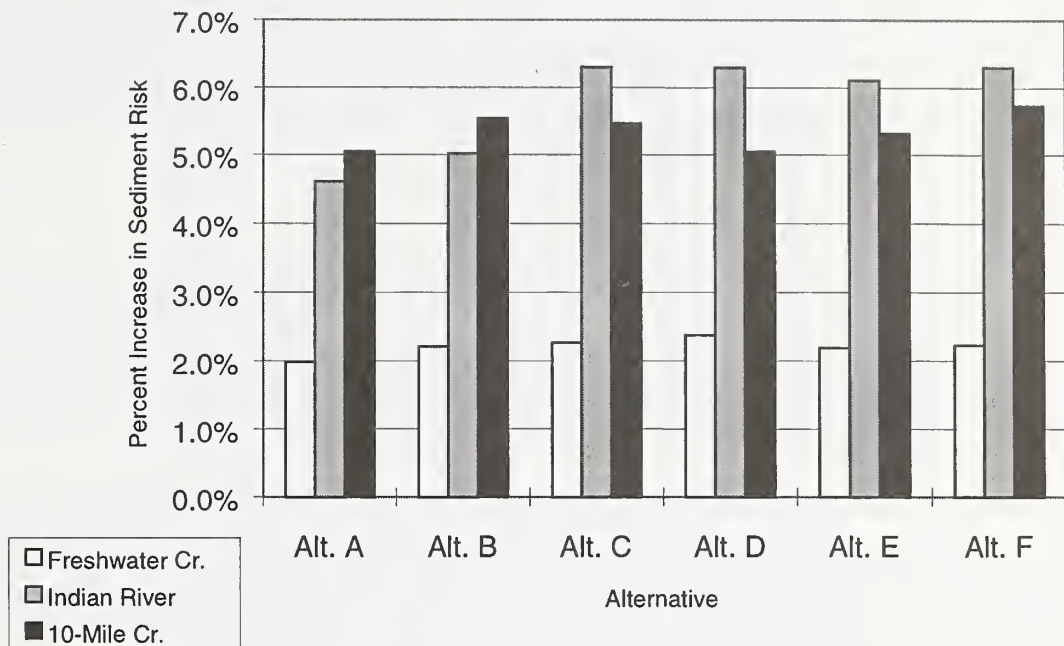
- the projected change in sediment risk over existing conditions;
- the cumulative change, which includes the impact of previous and projected harvest and road construction;
- the location of the sub-basin or reach in relation to “response reaches” (see Glossary);
- the level of the existing sediment risk value. (For example, is it currently high or is it projected to change to high?)

Figure 4-1 displays the increase in sediment risk for each watershed since 1956, the year that large-scale commercial timber harvest began in the Project Area. Alternative A (no-action) shows the current sediment risk. In the action alternatives, the change in sediment risk for each watershed is predicted to be no more than 1.6 percent greater than Alternative A. This low increase is explained by the fact that natural landslides occurring in the alpine area are the dominant erosion processes in the analysis area (see Chapter 3). Potential sediment from roading and logging makes up only a small portion of the overall sediment production in the watersheds. The small increase in sediment risk is not enough to be a significant concern.

The projected cumulative increases in sediment risk are also relatively low. Nearly all the change comes from past activities. As shown in Figure 4-1, the cumulative changes for each whole watershed are 6.3 percent or less for all alternatives, when compared to pre-harvest conditions (year 1956). These percentages are low enough in all alternatives that they are not a significant concern.

According to these results, all alternatives satisfactorily minimize the risk of sediment delivery to streams (Killinger et al. 1996). Implementation of modified 1997 Forest Plan Standards and Guidelines and BMPs will further ensure that increased sediment production due to the proposed alternatives will be minimal.

Figure 4-1 Increase in Sediment Risk over Pre-harvest (Year 1956) Conditions by Alternative and Watershed



While the sediment risk analysis model described above is accurate down to the scale of sub-basins, it may not adequately predict potential risk on individual sites. The most notable concern of this sort occurs along proposed Forest Service Road #7502, which would provide access to the LTF at the mouth of the 10-Mile Creek watershed in Alternatives B and D. A 200-yard segment of this road crosses sideslopes of over 100 percent, posing a high risk of mass failure. The slope below the road continues downward to 10-Mile Creek. Consequently, if a slide did occur, it would go directly into the stream. The application of BMPs and prudent road construction techniques (for example, earth-retaining structures below and adjacent to the road) would reduce but not eliminate the risk.

Water Chemistry

Chemical water quality in the Project Area is similar to pristine conditions. No changes in chemical water quality were evident from samples taken before and after previous timber harvest (Paustian et al. 1996). Although no additional water chemistry samples have been analyzed, there are no indications of historic or future sources of chemical contamination. Atmospheric sources of chemical pollutants are not a major factor influencing water quality in the region. Therefore, it is unlikely that minor soil disturbance from logging activities would result in measurable changes in dissolved water quality constituents (Paustian et al. 1996).

Additional road construction could change surface and shallow ground water drainage patterns in fen wetlands, and potentially result in depressed pH values in some palustrine channels (see Glossary). However, additional road construction in fens would be minor under any of the alternatives, and is not expected to have any major impact in any of the alternatives.

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Stream Temperature

No stream temperature changes are anticipated from any alternative. A protection strategy developed around the designation of Riparian Management Areas (RMAs) has been incorporated into the Indian River Project design. (See the Fish and Vegetation sections in this chapter and in Chapter 3 for explanation of Riparian Management Area strategies.) Streams adjacent to proposed harvest units would have a riparian buffer, and temperature effects would be negligible.

Stream Flow

In large basins where timber harvest activities are dispersed in space and over time, it can be expected that changes in stream flow would be small (Paustian et al. 1996). Stream flow analysis for Stacey Creek, a large watershed on Prince of Wales Island, indicated that summer low-flow volumes increased only after 35 percent of the watershed was harvested. As shown in Tables 4-2, 4-3, and 4-4, no alternative proposes harvest approaching this level in any watershed.

In Southeast Alaska, rain-on-snow peak flow events have the greatest susceptibility to change as a result of timber harvest. A flow analysis indicates that, of the three major watersheds in the Project Area, Indian River has the greatest susceptibility to rain-on-snow events due to the relatively large transient snowpack area in the drainage. However, rain-on-snow events are infrequent in the area, and major peak flows observed over the past two decades have been associated with fall rainfall events.

From assessing harvest levels in the transient snow zone (the area of winter snow pack) and cumulative basin-wide harvest by alternative, it is anticipated that some increase in summer low flows and peak flows would occur. These increases should not be significant enough, however, to affect channel morphology and habitat condition. In all alternatives, the increased harvest levels are not sufficient to produce significant flow changes in the Indian River system. (See Table 4-2.)

Table 4-2
Indian River Drainage (VCU 2200) Harvest Level by Percent of
Transient Snow Zone (TSZ) and for Entire Watershed

Alt.	% Proposed Harvest in TSZ	% Cumulative Harvest in TSZ	% Proposed Harvest in VCU	% Cumulative Harvest in VCU
A	0	9	0	6
B	7	16	5	11
C	4	13	3	9
D	1	10	0	6
E	5	14	3	9
F	10	19	6	12

Source: Kelliher 1996

In the Freshwater Creek drainage, some increase in peak and summer low flows is anticipated from the planned harvest levels. However, the increase to flows should not be significant enough to affect the stream morphology, substrate or large woody debris and therefore the Class I stream habitat condition. (See Table 4-3.)

Table 4-3
Freshwater Creek Drainage (VCU 2160) Harvest Level by Percent of
Transient Snow Zone (TSZ) and for Entire Watershed

Alt.	% Proposed Harvest in TSZ	% Cumulative Harvest in TSZ	% Proposed Harvest in VCU	% Cumulative Harvest in VCU
A	0	13	0	6
B	9	22	7	13
C	11	24	9	15
D	11	24	9	15
E	10	23	8	14
F	11	24	9	15

Source: Kelliher 1996

In the 10-Mile Creek drainage, harvest levels in the transient snow zone would double in Alternatives B, C, D, and F. A small to moderate increase in peak and summer low flows is anticipated, but should not increase the stream power and its bed-scour capacity significantly. (See Table 4-4.)

Table 4-4
10-Mile Creek Drainage (VCU 2221) Harvest Level by Percent of
Transient Snow Zone (TSZ) and for Entire Watershed

Alt.	% Proposed Harvest in TSZ	% Cumulative Harvest in TSZ	% Proposed Harvest in VCU	% Cumulative Harvest in VCU
A	0	25	0	7
B	26	51	13	20
C	26	51	13	20
D	30	55	14	21
E	17	43	8	15
F	32	57	14	21

Source: Kelliher 1996

Fish and Fish Habitat

Propagation of fish is a primary beneficial use of water in the Project Area. Logically, potential risks to water quality resulting from timber harvest activities are also risks to fish and fish habitat. These include increased sedimentation, cumulative changes in water temperature, and reduced summer or winter low flows in streams (and consequent impaired summer rearing and spawning for salmonids). Other potential impacts are destabilization of stream banks caused by blowdown, and impairment of fish passage from improper drainage structure installation (Killinger et al. 1996).

Protective measures already discussed in this chapter pertaining to water quality, water temperature, and stream flow are also applicable to the protection of fish and fish habitat. Risks to fish resulting from the proposed Indian River Timber sales would be minimized by a similar two-part process: 1) avoiding the areas of highest risk and 2) protecting the other areas of concern. Best Management practices are involved in both steps.

Fish biologists and hydrologists visited streams in the Project Area during the 1994 and 1995 field seasons to confirm and collect existing stream information, and to document and classify unmapped streams near potential impact areas. These field inventories and the GIS database were then used to identify and analyze areas of high risk to fisheries in the Project Area, such as wetlands, streams, and associated riparian areas. From this analysis, the initial pool of potential harvest units and roads was modified to avoid those areas that conflicted with stream riparian buffers or were obvious areas of high risk to aquatic resources.

4 Environmental Consequences

Avoiding areas of high concern and using protection measures (for example, Best Management Practices and the guidance detailed in unit and road cards) should assure protection of riparian areas and aquatic habitat. With the protection provided by these measures, the primary impacts to fish habitat and water quality would be from:

- unplanned events such as landslides or large-scale blowdown;
- roading through wetlands, streams, or riparian areas;
- sediment from roads;
- short-term changes in the magnitude and frequency of stream discharge due to interception of groundwater flows by road cuts; and
- consolidation and redirection of flows by road drainage structures.

Riparian Management Areas

Protection measures for fisheries resources in the Indian River Timber Sale(s) project are based on a Riparian Management Area (RMA) strategy¹. RMAs are land areas that are directly linked to streams, lakes, and ponds, and are of special concern in regard to fish, other aquatic resources, and wildlife. Specific standards and guidelines, designed to maintain stream and wetland integrity, are associated with these areas. The underlying strategy for protection is to strictly limit timber harvest and road construction in RMAs. Recommended strategies also account for the effects of past activities on riparian areas, wetlands and sensitive soils, and the potential for these effects to be magnified through natural disturbances (for example, mass wasting and windthrow). Future management also strives to maintain the undisturbed state of fen wetlands.

The areas within the Project Area delineated by the specialists as RMAs include sediment source areas, stream riparian buffers, and rich fens in portions of the Indian River, 10-Mile Creek, and Freshwater Creek watersheds, where the potential direct or indirect effects from management activities on fish habitat are the greatest. (Note: RMAs may or may not include all of the actual riparian area. See Glossary for detailed definitions, and Vegetation section in Chapter 3 for further discussion. See also the modified 1997 Forest Plan for definitions, standards and guidelines pertaining to RMAs.)

Sediment Source Areas (SSAs). SSAs are areas within the RMA classified as having a very high mass movement hazard or high mass movement hazard with high potential for sediment delivery to streams. Many of the SSAs in the Project Area correspond to extreme mass movement hazard areas that are considered too unstable to log. Some SSAs, however, are rated as high mass movement hazard; these are in the timber base, and some were included in the harvest unit pool. A Forest Service soil scientist or hydrologist reviewed these areas in the field and made recommendations to minimize potential sediment production, such as harvest prescriptions that leave many trees within the unit to help maintain soil stability.

¹ The Anadromous Fish Habitat Assessment (USDA Forest Service 1995) identified several concerns with current efforts to minimize accelerated erosion after timber harvest activities. Specifically, the report stated that stream buffers along Class I and II streams are not always wide enough to ensure protection from sedimentation, and that Class III streams are not given enough protection to fully control sedimentation. Also, clearcut harvesting and road construction on steep and unstable slopes has, in some cases, created increased risk of landslides and subsequent sedimentation to streams. Deficiencies in maintaining or closing out road systems could potentially cause road failures that would also lead to increased sedimentation. To address these concerns, Forest Service soils, hydrology, and fisheries specialists identified and delineated Riparian Management Areas (RMAs) within the Project Area (Paustian et al. 1996).

Stream Riparian Buffers. Stream riparian buffers are variable-width buffers within RMAs designed to protect the streams from the effects of harvest units or roads. Along Class I and II streams, these may vary in width from 100 feet (the minimum required by the Tongass Timber Reform Act) to 650 feet, depending on channel type or stream characteristics. Stream riparian buffer widths were verified in the field by completing transects across the stream and adjacent vegetation. RMAs also include riparian buffers along Class III channels which run along many of the unit boundaries.

Windfirmness of Stream Riparian Buffers

Edges of harvest units, including stream riparian buffer strips, are susceptible to damage from wind, which could lead to more sediment than would be caused by logging. This is particularly true when cutting up to the edge of incised, higher gradient Class III stream channels. Proposed harvest units near or within RMAs in the Project Area have been designed to minimize wind damage. Class III channels of concern are identified and documented in the unit cards, along with prescribed methods of tree removal that will ensure windfirm boundaries (see Appendix J for more details and specific examples).

One such removal method is collectively referred to as the "2/3 rule," which prescribes harvesting blowdown-prone trees within the buffers. Blowdown-prone trees are those rooted just below the slope break into a Class III V-notch, that have more than 1/3 of their height above the slope break. Trees with 2/3 or more of their trunk lying below the slope break are considered to be windfirm and would not be harvested. These prescriptions are based on the IRWA wind direction and blowdown analysis and on-site analysis conducted by resource specialists.

Probability of windfirmness can also be increased by a method of tree removal called "feathering," in which larger trees are removed and nonmerchantable trees are retained adjacent to stream buffers. Specific buffer strips where feathering or the 2/3 rule is prescribed are noted on the unit cards in Appendix J. Final site-specific buffer design would be completed during unit design and layout.

Table 4-5 lists projected miles of stream buffers resulting from the activities in all alternatives. With the RMA strategy, stream buffer strips, the application of Best Management Practices, and using feathering and other methods to maintain windfirmness, quantifiable effects on fish habitat are not expected in any of the alternatives.

Table 4-5
Miles of Stream Riparian Buffers Adjacent to Units

VCU	Existing Buffer	New Stream Buffers (Miles) by Alternative				
		Alt. B	Alt. C	Alt. D	Alt. E	Alt. F
2041	0	0.7	0.7	0.7	0	0.7
2160	7	2.3	2.6	2.6	2.3	2.6
2200	5.6	0.4	0.4	0	0.3	0.6
2220	2.8	1.1	1.5	1.5	0.9	1.6
Totals	15.4	4.5	5.2	4.7	3.6	5.5

Source: Killinger 1996

4 Environmental Consequences

Roads

The total acres/miles of roads and corridors within riparian areas and the number of stream crossings are used to compare potential impacts on fisheries and water quality. Table 4-6 displays the distribution of the cumulative totals of existing and new roads that would impact the riparian areas in each VCU by alternative. The range of total riparian acres (44.5 to 47.1) associated with new roads represents only 0.1 percent of the Project Area stream riparian acres.

Under any of the alternatives, additional road acres within riparian areas would be less than one percent of the total riparian acres within a single watershed. Changes in riparian functions (large woody debris input, temperature moderation, nutrient input, and bank stabilization) due to new road corridors from any of the alternatives would be negligible on a watershed scale.

Table 4-6 Existing and New Roads in Stream Riparian Buffers by VCU and Alternative						
VCU	Alt. A Existing Road Miles (acres)	Cumulative Road Miles/Acres in Stream Buffers				
		Alt. B Miles (acres)	Alt. C Miles (acres)	Alt. D Miles (acres)	Alt. E Miles (acres)	Alt. F Miles (acres)
2041	0.0 (0.0)	0.0 (0.0)	0.04 (0.24)	0.04 (0.24)	0.0 (0.0)	0.04 (0.24)
2160	2.0 (12.4)	2.4 (14.5)	2.9 (17.3)	2.9 (17.3)	2.8 (16.7)	2.9 (17.3)
2200	3.4 (20.8)	3.7 (22.2)	3.6 (21.8)	3.4 (20.8)	3.6 (21.8)	3.7 (22.2)
2220	1.1 (6.8)	1.3 (7.8)	1.3 (7.6)	1.4 (8.4)	1.2 (7.5)	1.2 (7.5)
Totals	6.6 (39.9)	7.4 (44.5)	7.7 (46.9)	7.7 (46.7)	7.6 (45.9)	7.8 (47.2)
Percent Increase		12%	17%	17%	15%	18%

Source: Killinger 1996

Note: Temporary roads are included in these figures.

Under all action alternatives, some stream habitat would be impacted by roads at stream crossings. The number of fish stream crossings in each alternative is a measure of potential effects on aquatic resources. Table 4-7 displays new fish stream crossings in each VCU, by alternative. As stated earlier, with application of BMPs, quantifiable effects on fish resources are not expected in any of the alternatives.

Table 4-7
Stream Crossings by Stream Class and Alternative

Stream Class	Alt. A (Existing Crossings)	Proposed (Additional) Stream Crossings				
		Alt. B	Alt. C	Alt. D	Alt. E	Alt. F
Class I	54	3	4	2	4	4
Class II	34	19	26	26	24	27
Class III	13	6	11	9	11	12
Total	101	28	41	37	39	43
Sensitive Crossings *	17	4	5	4	5	6

Source: Killinger 1996

* Sensitive crossings are associated with Alluvial Fan and several High Gradient Contained channels. These channel types present a management concern due to dynamic channel shifting or heavy bedload movement. Due to these factors, the crossing structure type (bridge or culvert), location of the structure, and planned maintenance level are crucial on these streams.

Note: Temporary road crossings are included in these figures.

Recreational Fisheries

Executive Order 12962 of June 7, 1995, directs Federal agencies to conserve, restore, and enhance aquatic systems to provide for increased recreational fishing opportunities nationwide. Section 1 of the Order directs the agencies to evaluate effects on aquatic ecosystems and recreational fisheries, develop and encourage partnerships, promote restoration, and provide access and promote awareness of opportunities of recreational fishery resources. The effects of the alternatives have been evaluated throughout this EIS, including effects to aquatic ecosystems and recreational fisheries.

The Indian River juvenile chinook stocking discussed in the Fish Habitat section of Chapter 3 has been a cooperative project between the Alaska Department of Fish and Game (ADF&G), Northern Southeast Regional Aquaculture Association (NSRAA), and the Forest Service. This project has produced chinook salmon for sport fisheries in the Tenakee Inlet area, including the lower Indian River freshwater fishery. The recently constructed fish pass over the barrier falls at Indian River will provide passage to upstream habitat for native coho salmon and possibly stocked chinook salmon. This will greatly enhance the recreational fishing in Indian River. Depending on road management objectives and interest by user groups, other partnerships may be possible in the Project Area for recreational fisheries.

Under all alternatives except D, road access would be improved from Sunshine Cove (near the East Tenakee trail) up Indian River and to the Upper Freshwater and 10-Mile Creek drainages. This would continue to provide access to the small ponds in the Indian River valley that contain resident Dolly Varden char. Most recreational fishing is expected to remain at saltwater, however, so the impact of improved access on recreational fishing opportunities is expected to be minor.

Vegetation

Direct, Indirect and Cumulative Effects

Old-Growth Forests and Timber Harvest

The primary vegetation type impacted by the proposed activities is old-growth forest. The action alternatives would result in the harvest of between 1,513 and 2,261 acres of old-growth. This acreage would be converted to successive stands of younger trees that would be harvested before they mature into old-growth forest. At least 87 percent of the current old-growth, or 76 percent of the 1956 old-growth forest (base line year) would remain in the Project Area under any alternative. The proposed harvest would primarily impact western hemlock, mixed conifer, and Sitka spruce plant associations. Mountain hemlock and western hemlock-yellow-cedar associations would also be impacted.

The proposed harvest is concentrated on the Steep and Moderately Steep Forested Mountain Slopes, the Coluvial/Fluvial/Coastal Surfaces and the Forested Hills landtype associations (LTAs). Little harvest is identified for the Alpine/Subalpine Summits and Ridges and the Lowland Wetland-Forest Complex LTAs. (See the Landscape Ecology and Vegetation sections in Chapter 3, and Appendix H for a full discussion of landtype associations.)

Table 4-8 shows the acres of remaining old-growth by LTA and alternative. Species composition and forest structure vary significantly from site to site (Arsenault and Bradfield 1995; Martin et al. 1995). In order to maintain biodiversity, it is important that old-growth forest remain within the different LTAs.

(Note: For the vegetation analysis of effects, units were treated as clearcuts if more than 50 percent of the unit was prescribed for harvest. Where less than 50 percent of the unit was prescribed for harvest, remaining old-growth acres were calculated by multiplying the total unit acres by the percentage of the unit to remain unharvested.)

Table 4-8
Acres of Remaining Old-Growth Forest in the Project Area: A Comparison of Action Alternatives, No Action (Alt. A), and Pre-harvest (1956) Acreages, by Landtype Association

Landtype Association	1956 Acres (Pre-harvest)	Remaining Old-Growth Acres (and percentage remaining compared to 1956)					
		Alt. A (No Action)	Alt. B	Alt. C	Alt. D	Alt. E	Alt. F
Alpine/subalpine summits and ridges	633	539 (85.2)	537 (84.8)	537 (84.8)	537 (84.8)	537 (84.8)	537 (84.8)
Brushfields	2,124	*2,144 (100.9)	2,115 (99.6)	2,106 (99.2)	2,107 (99.2)	2,061 (97.0)	2,098 (98.8)
Steep forested mountain slopes	6,477	5,873 (90.7)	5,165 (79.7)	5,130 (79.2)	5,141 (79.4)	5,184 (80.0)	4,867 (75.1)
Mod. steep forested mountain slopes	4,211	3,840 (91.2)	3,476 (82.5)	3,444 (81.8)	3,626 (86.1)	3,453 (82.0)	3,298 (78.3)
Forested hills	306	306 (100.0)	281 (91.8)	281 (91.8)	281 (91.8)	281 (91.8)	281 (91.8)
Colluvial/fluvial/coastal surfaces	3,615	2,234 (61.8)	2,071 (57.3)	1,978 (54.7)	1,971 (54.5)	2,043 (56.5)	1,935 (53.5)
Lowland wetland-forest complex	1,179	1,132 (96.0)	1,123 (95.3)	1,117 (94.7)	1,121 (95.1)	1,110 (94.1)	1,114 (94.5)
Totals	18,545	16,068 (86.6)	14,768 (79.6)	14,593 (78.7)	14,784 (79.7)	14,669 (79.1)	14,130 (76.2)

Source: Sitka Office GIS, Huecker 1997.

* Differences in GIS data types for 1956 and 1994 (Alt. A) in some cases result in more apparent old-growth acres in 1994 than in 1956.

The percentage of total old-growth forest that would remain in each LTA does not vary greatly by alternative (Table 4-8). In all of the action alternatives, old-growth acreage in the Colluvial/Fluvial/Coastal Surfaces LTAs is the most affected.

Cumulative vegetation effects were analyzed for the Northeast Chichagof area. Harvest is planned for the Eight Fathom and Iyoutug areas. No other harvest areas are scheduled before year 2010. It is estimated that 904 acres will be impacted at Eight Fathom and 2,627 acres at Iyoutug (Regan 1997). By using the same proportions of harvested acres by LTA as for the proposed Indian River Project (Alternative B), an estimate can be made of the cumulative harvest in the Northeast Chichagof area.

Table 4-9 displays the previously harvested and estimated future harvest acres in the Northeast Chichagof area, using the proportional method described above. In calculating previously harvested acres, as well as planned acres for Eight Fathom and Iyoutug, it is assumed that the units will be clearcut.

Harvesting timber would result in additional fragmentation of the existing old-growth forest. See the Wildlife section in this chapter for discussion of patch fragmentation. Timber harvest would also result in some windthrow, particularly in old-growth stands that would be exposed to prevailing winds following harvest of adjacent trees.

Table 4-9
**Past and Estimated Future Harvest in Northeast Chichagof:
Acres Harvested Prior to 1994 and Acres Estimated to be Harvested in Eight
Fathom and Iyoutug Project Areas, by Landtype Association**

Landtype Association (LTA)	Previously Harvested Acres	Eight Fathom *	Iyoutug/Otter Lake *	Total Harvest Acres **
Alpine/subalpine summits and ridges	50	1	4	56
Brushfields	535	20	59	615
Steep forested mountain slopes	5,249	491	1,428	7,168
Mod. steep forested mountain slopes	4,362	254	739	5,355
Forested hills	802	18	51	871
Colluvial/fluvial/coastal surfaces	6,165	113	327	6,605
Lowland wetland-forest complex	503	6	18	528
Estuaries/beaches	0.31	0	0	0.31
Totals	17,667	904	2,627	21,198

Source: Huecker 1997

* Acres shown are estimates, using the same percentages of harvest by LTA as for Alt. B (the proposed action for Indian River) and multiplying the estimated total harvest acres by these percentages.

** Total acreage does not include acreage proposed for harvest in the Indian River Project.

4 Environmental Consequences

Wetlands

The action alternatives include some construction of new roads across wetlands that cannot be avoided. Roading may alter the hydrologic function, cause puddling or substrate compaction, and displace soil or accelerate erosion in wetlands. All of these effects can potentially impair wetland function and values. However, implementation of Best Management Practices would limit roading impacts.

Table 4-10 shows new road miles in wetlands, as delineated by the National Wetlands Inventory (USFWS 1996). Twenty-one to 31 percent of total new road miles would be constructed in wetlands in the action alternatives. The total wetland acres that could be impacted under any of the alternatives comprise less than one percent of Project Area wetlands.

Table 4-10 Miles of New Road Crossing Wetlands, and Percent of Total Wetlands Crossed by Existing and Proposed Roads, by Alternative and VCU						
VCU	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E	Alt. F
2041	0	0	0	0	0	0
2160	0	1.2	2.3	2.3	2.3	2.3
2200	0	0.4	0.4	0.4	0.3	0.4
2201	0	0	0	0	0	0
2210	0	0	0	0	0	0
2221	0	0	< 0.1	< 0.1	< 0.1	< 0.1
Total new miles	0	1.6	2.7	2.7	2.6	2.7
Total acres *	0	9.5	16.5	16.5	16.0	16.5
% of total new road mi.		21%	28%	29%	31%	28%
% of total wetlands (6,433 ac.)		0.15%	0.26%	0.26%	0.25%	0.26%
% of total wetlands crossed by existing (5.7 mi.) and proposed roads.	0.54%	0.68%	0.79%	0.79%	0.78%	0.79%

Source: Trull 1997

* Based on a 50-foot road clearing width.

Table 4-11 displays the acres of wetlands in proposed harvest units. Harvest would occur on less than three percent of the total Project Area wetlands in any alternative. Wetlands total less than six percent of the harvest acres under all the alternatives.

Table 4-11 Acres of Wetlands in Proposed Harvest Units, by Alternative and VCU						
VCU	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E	Alt. F
2041	0	2.4	2.4	2.4	0	2.4
2160	0	26.3	45.9	45.9	45.9	45.9
2200	0	67.6	19.8	0	42.6	92.6
2201	0	0	0	0	0	0
2210	0	0	0	0	0	0
2221	0	1.9	1.2	1.2	1.0	1.9
Total	0	98.2	69.4	49.6	89.5	142.9
% of Total harvest acres *	--	4.5%	3.8%	2.6%	5.4%	5.3%
% of Total wetland acres	--	1.5%	1.1%	0.8%	1.4%	2.2%
% of Total wetlands in existing and proposed units *	0.52%	2.0%	1.6%	1.3%	1.9%	2.7%

Source: Trull 1997

* Acres are calculated as though clearcut.

Wildlife

Direct, Indirect, and Cumulative Effects

This section describes the effects of the Indian River project on wildlife habitat and the suitable habitat of critical management indicator species (MIS) such as Sitka black-tailed deer, brown bear, and marten. Effects on other MIS (river otter, red squirrel, brown creeper, red-breasted sapsucker, hairy woodpecker, and bald eagle) are also described.

Wildlife habitat and MIS suitable habitat acreages impacted by the proposed alternatives are less than the numbers displayed in the following tables. This is due to minor adjustments (less than 75 acres) in the alternative acreages between the Draft EIS and Final EIS. None of these small acreage adjustments changed the overall percentages and conclusions in the analysis.

Cumulative effects for this project are evaluated for all of the Northeast Chichagof landscape analysis area, including private land. All past and present timber harvest is included, as well as harvest in the reasonably foreseeable future (year 2010). Effects beyond the year 2010 (closed canopy effects) are assessed using data from the 1997 TLMP EIS (USDA Forest Service 1997a). See the Subsistence section in this chapter for more information.

Wildlife Habitat

Each action alternative includes timber management activities within wildlife habitat. Direct and cumulative effects include reduced wildlife habitat acreage and potential habitat capability. Effects would be reduced by application of the modified 1997 Forest Plan management prescriptions, standards and guidelines, Best Management Practices (BMPs), stream buffers, riparian management areas, and unit design criteria (for example, unit size below 100 acres).

Table 4-12a displays both project and cumulative habitat acreage changes within the Project Area; the table compares each action alternative, as well as pre-harvest conditions (1956) and the no-action alternative (Alternative A). Table 4-12b displays cumulative habitat acreage changes for each action alternative in relationship to all of Northeast Chichagof Island (VCUs 202 – 224).

Table 4-12a
Acres Impacted by Past and Proposed Logging and Cumulative Percent Change of Project Area Habitats
Under Each Action Alternative

Habitat Type	1956 Acres (100%)	Alt. A * Acres and % Impacted prior to 1996	Alt. B * Acres (Cum. %)	Alt. C Acres (Cum. %)	Alt. D Acres (Cum. %)	Alt. E Acres (Cum. %)	Alt. F Acres (Cum. %)
Beach Fringe	941	201 (-21.4)	2 (-21.5)	0 (-21.4)	2 (-21.5)	0 (-21.4)	0 (-21.4)
Estuary Fringe	507	7 (-1.4)	3 (-2.0)	0 (-1.4)	3 (-2.0)	0 (-1.4)	0 (-1.4)
Old-Growth	21,156	2080 (-9.8)	2139 (-19.9)	2078 (-19.7)	1788 (-18.3)	1618 (-17.5)	2624 (-22.2)
Second-Growth	168	2228 (+1229.6)	2162 (+2519.3)	1937 (+2485.5)	1634 (+2304.4)	1475 (+2209.4)	2489 (+2814.4)
Alpine/ Sub-Alpine	2,059	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Riparian	4,422	1330 (-30.1)	274 (-36.3)	316 (-37.2)	318 (-37.3)	189 (-34.4)	353 (-38.1)

Source: Suminski 1996

* Alternative A = No Action. Alternative B = Proposed Action.

Table 4-12b
Cumulative Acres and Percent Change of Northeast Chichagof Island Habitats
Impacted by Alternative

Habitat Type	1956 Acres (100%)	1996 Acres * (% Change)	Alt. B Acres ** (% Change)	Alt. C Acres (% Change)	Alt. D Acres (% Change)	Alt. E Acres (% Change)	Alt. F Acres (% Change)
Beach Fringe	10,916	10,201 (-7%)	10,199 (-7%)	10,201 (-7%)	10,199 (-7%)	10,201 (-7%)	10,201 (-7%)
Estuary Fringe	8,846	8,210 (-7%)	8,207 (-7%)	8,210 (-7%)	8,207 (-7%)	8,210 (-7%)	8,210 (-7%)
Old-Growth	157,905	137,125 (-13%)	134,986 (-15%)	135,047 (-14%)	135,337 (-14%)	135,508 (-14%)	134,502 (-15%)
Second- Growth	6,848	27,400 (400%)	29,561 (432%)	29,505 (431%)	29,201 (426%)	29,042 (424%)	30,056 (439%)
Alpine/ Sub-Alpine	12,547	12,547 (0%)	12,547 (0%)	12,547 (0%)	12,547 (0%)	12,547 (0%)	12,547 (0%)
Riparian	24,164	17,197 (-29%)	16,923 (-30%)	16,881 (-30%)	16,878 (-30%)	17,008 (-30%)	16,844 (-30%)

Source: Suminski 1996

* 1996 Acres = Alternative A (No Action).

** Alternative B = Proposed Action

Beach and Estuary Fringe Habitat. Construction of a new log transfer facility in the 10-Mile Creek drainage (Alternatives B and D) would result in reductions of 0.1 percent of beach fringe habitat and 0.6 percent of estuary fringe habitat in the Project Area. These habitats would remain unaffected in all other alternatives (Table 4-12a). Cumulatively, reductions in these two habitats across the Northeast Chichagof landscape area are too small to measure, resulting in no change (Table 4-12b).

Old-Growth Habitat. Since the majority of harvest will occur in old-growth habitat, reduction in habitat is proportional to the acreage harvested. Alternative F, which harvests the largest number of acres, will result in the largest reduction (12.4 percent), followed by Alternative B (10.1 percent), Alternative C (9.9 percent), Alternative D (8.5 percent), and Alternative E (7.7 percent). (See Table 4-12a.) Across the Northeast Chichagof landscape area, the cumulative reduction in this habitat is estimated to be 1 to 2 percent (Table 4-12b).

Second-Growth Habitat. Old-growth habitat would be converted to second-growth habitat in all action alternatives. Alternative F would convert the most. Alternative E would convert the least (Table 4-12a). Across the Northeast Chichagof landscape area, the cumulative increase in this habitat is estimated to be between 24 and 39 percent (Table 4-12b).

Alpine/subalpine habitat. There would be no harvest or road-building activity in the alpine/subalpine habitat type in any of the alternatives. Correspondingly, there would be no change from the present condition in the Project Area or in the Northeast Chichagof landscape area (Tables 4-12a and 4-12b).

Riparian Habitat. Reductions in riparian habitat would occur in all action alternatives, corresponding to the acreage harvested in lower elevation areas near streams outside of buffers. The largest reduction (8.0 percent) would occur in Alternative F, followed by Alternative B (6.2 percent), and Alternative E (4.3 percent). (See Table 4-12a.) Across the Northeast Chichagof landscape area, the cumulative reduction in this habitat is estimated to be 1 percent (Table 4-12b).

Fragmentation

The alternatives were analyzed to assess the condition and trend of old-growth habitat distribution and size. In all of the action alternatives, the greatest cumulative effect would be the fragmentation of large patches into smaller patches. Table 4-13a displays acres and percent change of patches by alternative cumulatively for Northeast Chichagof Island.

One example of the effects of fragmentation is the increase in edge habitat acres, and the corresponding decrease in interior old-growth habitat. Interior old-growth species (for example, marbled murrelets) are faced with reduced habitat and increased competition from edge species such as crows and ravens. Of the total interior old-growth habitat in 1956, 78 percent was contiguous core old-growth (123,191 of 158,293 acres). By 1996, this percentage dropped to 60 percent (82,600 of 137,825 acres). The action alternatives would result in another five percent or less decrease in the contiguous old-growth habitat acres (see Table 4-13b).

Old-growth Habitat LUDs in the Project Area and throughout the Tongass National Forest, along with beach and estuary fringes and other non-development LUDs, serve to mitigate the effects of fragmentation by providing habitat for dependent species.

Table 4-13a
Northeast Chichagof Landscape Analysis Area Cumulative Effects:
Old Growth Patch Acres in 1956 Compared to 1996 and Action Alternative Acres

Patch Size Class in Acres	Old Growth Patch Acres						
	Yr. 1956 Acres	Alt. A Acres * (Yr. 1996)	Alt. B Acres **	Alt. C Acres	Alt. D Acres	Alt. E Acres	Alt. F Acres
0 to 25 Ac.	848	1,912	2,108	2,126	2,076	2,160	2,186
26 to 75 Ac.	1,319	2,624	3,213	3,244	3,244	3,179	3,307
76 to 200 Ac.	1,327	4,236	5,402	5,046	5,046	4,749	5,046
201 to 500 Ac.	783	4,759	6,385	5,421	5,421	5,938	5,959
501 to 1,600 Ac.	580	11,399	15,207	16,523	15,207	16,345	16,181
1,601 to 2,500 Ac.	0	5,533	5,533	5,533	5,533	5,533	5,533
2,501 to 10,000 Ac.	0	42,828	41,069	41,137	42,993	41,837	39,887
> 10,000 Ac.	143,179	38,657	26,876	26,876	26,876	26,876	26,876

Source: Suminski 1996

* Alternative A = No Action.

** Alternative B = Proposed Action.

Table 4-13b
Northeast Chichagof Landscape Analysis Area Cumulative Effects:
Core and Edge Old-Growth in Acres and Percent of Change in 1956 Acres

Type	1956 Acres	1996 Acres * (% Change)	Alt. B Acres ** (% Change)	Alt. C Acres (% Change)	Alt. D Acres (% Change)	Alt. E Acres (% Change)	Alt. F Acres (% Change)
Core	123,191	82,600 (-33 %)	76,554 (-38 %)	76,858 (-38 %)	77,397 (-37 %)	77,543 (-37 %)	75,995 (-38 %)
Edge	35,102	55,225 (57 %)	57,996 (65 %)	57,758 (65 %)	57,512 (64 %)	57,528 (64 %)	58,079 (65 %)
Total	158,293	137,825 (-13 %)	134,550 (-15 %)	134,616 (-15 %)	134,909 (-15 %)	135,071 (-15 %)	134,074 (-15 %)

Source: Suminski 1996

* Alternative A = No Action.

** Alternative B = Proposed Action.

4 Environmental Consequences

Suitable Habitat and Management Indicator Species (MIS)

Habitat models were designed to evaluate the impacts of timber harvest on suitable wildlife habitat. The models assign the same habitat suitability value to all harvested areas regardless of the harvest method proposed (for example, clearcutting vs. partial harvest). As a result, the effects indicated by the models are more severe than would actually be expected, particularly in areas where the harvest method leaves a large percentage of the unit standing. For example, units in which as little as 10 percent of the timber volume would be removed were modeled as if they were clearcut. Suitable habitat impacts have been adjusted to reflect effects from partial harvests in the deer and marten models. The model outputs were multiplied by the percentage of acres harvested to show the reduced impact of the alternative silvicultural prescriptions.

Table 4-14 summarizes the acres and percent change in suitable habitat by species and alternative for the Project Area. All species are expected to have viable populations well distributed on Northeast Chichagof Island, despite potential reductions in suitable habitat as high as 20 percent for some species in some alternatives.

Specific and general standards and guidelines in the modified 1997 Forest Plan (USDA Forest Service 1997) are designed to reduce, minimize, or avoid adverse affects to the management indicator species (MIS), as well as other species of concern. For most old-growth-associated species not specifically assessed here, it can be assumed that, to the extent that functional and inter-connected old-growth ecosystems are maintained, the various specific habitats within them that are important to these species would also be maintained.

Table 4-14
Acres of MIS Suitable Habitat in the Project Area and Percent Reduction by Alternative

Species	Alt. A No Action	Alt. B Proposed Action	Alt. C	Alt. D	Alt. E	Alt. F
Sitka Black-tailed Deer *	20,819	19,778 (5%)	19,570 (6%)	19,778 (5%)	19,986 (4%)	19,362 (7%)
Brown Bear	37,177	35,690 (4%)	35,690 (4%)	35,690 (4%)	36,062 (3%)	35,318 (5%)
River Otter	4,330	4,027 (7%)	4,007 (8%)	4,007 (8%)	4,113 (5%)	3,940 (9%)
Marten *	21,569	20,059 (7%)	19,843 (8%)	20,059 (7%)	20,059 (7%)	19,196 (11%)
Red Squirrel	26,325	23,956 (9%)	23,956 (9%)	24,482 (7%)	24,482 (7%)	23,429 (11%)
Brown Creeper	8,380	7,291 (13%)	7,374 (12%)	7,542 (10%)	7,626 (9%)	7,039 (16%)
Red Breasted Sapsucker	24,071	20,942 (13%)	20,942 (13%)	21,423 (11%)	21,664 (10%)	20,220 (16%)
Hairy Woodpecker	17,190	14,440 (16%)	14,611 (15%)	15,127 (12%)	15,127 (12%)	13,752 (20%)
Bald Eagle	2,840	2,613 (8%)	2,584 (9%)	2,584 (9%)	2,670 (6%)	2,528 (11%)

Source: Suminski 1996

* Figures are adjusted to account for partial harvest.

Sitka Black-tailed Deer - *Odocoileus hemionous sitkensis*

The model results show that Alternative E would reduce suitable deer habitat the least (Table 4-14). This alternative would also have less impact because of the effort to avoid harvesting low-elevation south-facing stands. Alternative F would have the largest impact because of the higher volume and acreage harvested. Habitat capability (currently 963 deer) would decline correspondingly to 915 deer in Alternatives B and D, 905 in Alternative C, 924 in Alternative E, and 896 in Alternative F.

Brown Bear - *Ursus arctos*

The bear model shows that Alternative E would result in the least reduction in suitable bear habitat (Table 4-14). Alternative F would harvest more old-growth habitat, which is important to bears, and so would have the greatest suitable habitat reduction.

On September 30, 1997, the Forest Service consulted with the Alaska Department of Fish and Game (ADF&G) concerning identifying and managing important brown bear foraging sites in the Project Area (modified 1997 Forest Plan, Bear Habitat Management Standard and Guideline B, page 4-114). ADF&G identified the lower reaches of Indian River below the falls, the lower reaches of 10-Mile Creek, and the area around the intersection of Road Nos. 7500 and 7502 in VCU 2160 as potentially important foraging sites. The latter site was important due to large numbers of bears traveling through the area on their way to other places.

There are no harvest units in any of the alternatives near the falls on Indian River. Harvest units along 10-Mile Creek and near the intersection of Roads 7500 and 7502 either have sufficiently wide buffers, or are more than 500 feet from fish streams, to meet the standard and guideline. Buffers in units along the lower reaches of 10-Mile Creek will be laid out by a wildlife biologist.

River Otter - *Lutra canadensis*

River otters prefer habitats immediately adjacent to coastal and fresh water aquatic environments. Old-growth forests in these areas have the highest value habitat, providing cover and burrow and den sites. Non-development old-growth LUDs, beach and estuary fringes, streamside buffers, riparian management areas, and application of standards and guidelines in the Project Area and Northeast Chichagof Island increase the probability of maintaining viable, well-distributed populations over the short and long term.

The suitable habitat model indicates that Alternative E would have the least reduction in suitable habitat for otter, and Alternative F would have the greatest reduction (Table 4-14). Alternative E minimizes the amount of low-elevation harvest near riparian areas while Alternative F has the most low-elevation cutting, especially in the 10-Mile Creek drainage.

Red Squirrel - *Tamiasciurus hudsonicus*

Old-growth Sitka spruce forests in Southeast Alaska provide optimum habitat for red squirrel. However, the species also does fairly well in second-growth timber stands at seed-producing age. Model results indicate that Alternative E would have the least reduction in suitable habitat for red squirrel, and Alternative F would have the greatest reduction (Table 4-14). Applying the reserve tree/cavity-nesting standards and guidelines conserves red squirrel habitat, which would increase the probability of maintaining viable, well-distributed populations over the short and long term.

4 Environmental Consequences

Marten - *Martes americana*

Harvesting old-growth forest would decrease habitat for marten by reducing the number of resting and winter hunting sites, the amount of overhead cover, and preferred prey (Suring 1993). Clearcuts retain some habitat value, since residual slash provides overhead cover and some less-preferred prey species are available. Research results indicate, however, that actual clearcut use by marten is very limited in Southeast Alaska (Suring 1993). The model shows that Alternatives B, D, and E would have the least reduction in suitable habitat for marten, and Alternative F would have the greatest reduction (Table 4-14).

The 1997 FORPLAN analysis identified areas in the high-risk East Chichagof Island biogeographic province in which over 33 percent of the productive old-growth (POG) may be converted to young harvest stands by year 2095. Within the Project Area, only one such VCU (VCU 2220) was identified. Table 4-14a displays the acres of POG in VCU 2220 as of 1954 and 1997; percent to be harvested by the Eight Fathom selected alternative; percent harvested by the Indian River alternatives; and the year 2095 cumulative projection.

Currently, 14.2 percent of the POG in VCU 2220 has been converted to young harvest stands. The Eight Fathom Project will increase this percentage to 20.4 percent. The Indian River Project increases the percentage to 22.8 percent in Alternative B, 24.5 percent in Alternatives C and D, 23.5 percent in Alternative E, and 24.0 percent in Alternative F. These figures are well below the 33 percent level that would require additional restrictive standards and guidelines. The 1997 TLMP EIS projects that VCU 2220 will have 39.6 percent of the POG converted to young stands by year 2095 if current harvest rates are maintained (USDA Forest Service 1997a). If future timber sales reach the 33 percent level, the more restrictive standards and guidelines would apply.

New Forest-wide standards and guidelines for marten in VCUs where less than 33 percent of the POG has been harvested have been applied to this project. These include:

- retaining approximately 10 to 20 percent of the original stand structure (all clearcut with retention harvest units with high-value marten habitat will retain at least 10 percent of the canopy within the harvest unit),
- retaining an average of at least four large trees per acre for future snag recruitment,
- retaining an average of at least three large decadent (dead or dying) trees per acre, and
- retaining an average of at least three pieces per acre of down material (logs) generally distributed throughout the harvest unit.

The Forest Service met with representatives from the interagency implementation team to review the extent to which this new marten standard and guideline should be incorporated into the Indian River Project. The new standard and guideline is being fully applied in this project. (Note: the interagency meetings were held on September 23, 1997 with the U.S. Fish and Wildlife Service, Alaska Division of Governmental Coordination, Department of Fish and Game, and Department of Environmental Conservation; and on October 10, 1997 with the National Marine Fisheries Service and the Environmental Protection Agency.)

Table 4-14a
VCU 2220 Acres of Productive Old-Growth (POG) in 1956 and 1997, Eight Fathom POG Harvest %, Indian River POG Harvest by Alternative, and Projected POG Harvested % in 2095

VCU	POG Acres 1954	POG Acres 1997	POG % Harvested 1997	8 Fathom	Indian River						POG % Harvested 2095
				POG % Harvested	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E	Alt. F	
2220	6,635	5,696	14.2%	6.2%	0%	2.4%	4.1%	4.1%	3.1%	3.6%	39.6%

Source: Shipley 1997

Note: All clearcuts in VCU 2220 were assumed to be high volume/high quality marten habitat. Actual volume/marten habitat may be lower, resulting in lower percentages. Data in the last column is from the 1997 TLMP EIS.

Brown Creeper - *Certhia americana*

Brown creepers are dependent on high-volume old-growth timber, with tree size being more important than tree species. As a result, brown creepers can be affected by timber harvest. Model results indicate that Alternative E, which minimizes the amount of low-elevation and high-volume harvest, would reduce suitable habitat for this species the least (Table 4-14). Alternative F has the most low-elevation cutting and high-volume harvest, especially in the 10-Mile Creek drainage, and so would have the greatest reduction.

Applying the reserve tree/cavity-nesting standards and guidelines conserves brown creeper habitat, which would increase the probability of maintaining viable, well-distributed populations over the short and long term.

Red-Breasted Sapsucker - *Sphyrapicus ruber*

The red breasted sapsucker suitable habitat model gives the highest value to low-volume old-growth (8,000 to 20,000 board feet per acre), based on studies done in Southeast Alaska. Clearcuts and second-growth have no habitat value in the model. Correspondingly, model results indicate that Alternative F, which harvests the most low-volume harvest habitat, would reduce suitable habitat the most (Table 4-14). Alternative E, which harvests the least amount of low-volume habitat, would have the least reduction.

The model likely overestimates the effect of timber harvest, since it considers all units to be clearcut, and assigns no habitat value to clearcuts. Alternate methods of harvest would actually have less impact than clearcutting. Applying the reserve tree/cavity-nesting standards and guidelines conserves red-breasted sapsucker habitat, which would increase the probability of maintaining viable, well-distributed populations over the short and long term.

Hairy Woodpecker - *Picoides villosus*

Hairy woodpeckers prefer high-volume old-growth forest habitat for foraging and nesting (Suring 1993). During the regeneration stage of even-aged timber stands, forests have little potential for hairy woodpecker habitat (Suring 1993). Model results indicate that Alternative E, which minimizes the amount of low-elevation and high-volume harvest, would reduce suitable habitat for this species the least (Table 4-14). Alternative F has the most low-elevation cutting and high-volume harvest, especially in the 10-Mile Creek drainage, and so would have the greatest reduction. Applying the reserve tree/cavity-nesting standards and guidelines conserves hairy woodpecker habitat, which would increase the probability of maintaining viable, well-distributed populations over the short and long term.

Bald Eagle - *Haliaeetus leucocephalus*

The non-development LUDs (Old-growth Habitat) and bald eagle, riparian, and beach and estuary fringe Forest-wide standards and guidelines (USDA Forest Service 1997) are specifically designed to protect nesting habitat. This protection extends through time as well as across the Northeast Chichagof Island landscape area. Application of these measures would increase the probability of maintaining viable, well-distributed populations over the short and long term.

Model results indicate that Alternative E would reduce suitable habitat for bald eagle the least (Table 4-14). Alternative F would have the greatest reduction. The model reflects the reduction in the quality of foraging areas near riparian habitats.

Nesting bald eagles are vulnerable to human disturbance. However, because individual eagles vary considerably in their response to human activity, it is difficult to predict the effects of specific disturbances (Sidle et al. 1986). Potential disturbance activities of proposed Project actions include road construction, and truck and heavy equipment traffic.

4 Environmental Consequences

Other Harvest Operations Affecting Wildlife

The bald eagle and its habitat are given special protection through an Interagency Agreement between the Forest Service and the U.S. Fish and Wildlife Service (USFWS 1990), and by the Bald and Golden Eagle Protection Act. One bald eagle nest tree is within a half mile of the road or the proposed LTF at 10-Mile Creek. In Alternatives B and D, these proposed actions would require a variance from the Interagency Agreement.

Helicopters

Helicopters would be used in the Project Area for yarding logs, transporting personnel and equipment in and out of harvest units, and general personnel transport.

The primary concern expressed is that low-level flights over wild animals, especially brown bears and eagles, may cause physiological and/or behavioral responses that reduce the animals' fitness or ability to survive. Helicopter encounters cause direct sound and sight stimuli to wildlife in their natural setting. These include over-flights, approach and take-off patterns to landings, hovering, actual landing and sitting with the engine operating, as well as varying levels and types of sounds created by blade pitch and distance of helicopters from the animal.

The effect on wildlife depends on life history characteristics of the species, characteristics of the aircraft and flight activities, and other factors such as habitat type and previous exposure to aircraft. While the behavioral responses by animals to over-flights have been well documented for several species, few studies have addressed the indirect consequences.

According to ADF&G biologists, if the intrusions are infrequent and unpredictable, these impacts would be minimal and non-measurable except for the immediate behavioral responses. However, if a helicopter were to land at a given location periodically over the spring season (April through May), there seems little doubt that bears frequenting the area would move to another area or change habitats.

Helicopter operations have the potential to disturb eagles. Eagles vary considerably in their response to human activity. Some pairs tolerate constant activity near the nest territory, while others abandon their nests. The interagency agreement between the Forest Service and the USFWS recommends that repeated helicopter flights and helicopter logging be avoided within 1/4 mile of an eagle nest tree. No helicopter logging or repeated flights are planned within 1/4 mile of any bald eagle nest, and no adverse effect to bald eagles is anticipated.

Roads, Logging Camps, and LTFs

Road construction in each action alternative would improve hunter access to the Project Area, which may result in greater hunter success for deer. Since the roads in the Project Area are not linked to a municipal road system, hunters would have to transport vehicles by boat or drive across tideflats to access the remote road system. Increased vehicular access would last until the road is physically closed by removing culverts and bridges or until the road becomes overgrown with alder. Roads left open to vehicles would result in greater impacts than roads closed to vehicular traffic. Closed roads would support hunter access on foot for several years following harvest.

Roads increase access for bear hunters and poachers, as well as the probability of vehicle-bear collisions, defense-of-life-and-property incidents, and the frequency of energy-intensive flight responses by bears (McLellan and Shackleton 1988). Since Project Area roads would not be linked to any community, the greatest disturbance to bears would occur during road building and timber harvest activity. Vehicles could be transported by boat to roads in the Project Area. Hunting mortalities should be low since current hunting

regulations prohibit the use of motorized vehicles to hunt brown bears from the roads on Chichagof Island.

There are two types of wildlife effects associated with a log transfer facility and logging camp. First, there is the potential loss of wildlife habitat resulting from clearing activities for the camp, sort yard, and associated facilities. Second, and more importantly, there is the disturbance to wildlife resulting from increased human activity. This includes disturbance of wildlife use patterns, increased harvest, and increased human-bear encounters. These effects are minimized when the camp facilities are on a barge (floating camp) as opposed to being located on the uplands. The overall effects of disturbance to wildlife use patterns are expected to be minor. These effects are addressed in more detail in the Subsistence section in this chapter.

Summary Comparison of Alternatives

The main direct effect on wildlife habitats within the Project Area is reduced suitable habitat for each of the management indicator species (MIS). Alternative F, which harvests the most old-growth forest, would result in the greatest reduction. Both direct and indirect effects on habitat capabilities for MIS would occur in all action alternatives.

Effects have been reduced in all alternatives by identifying Old-growth LUDs, and maintaining a minimum 100-foot stream buffer on all Class I and II streams. The buffers would accommodate animal species like brown bear, which are highly dependent on riparian habitats. Other measures to reduce effects include maintaining estuary/beach fringes and Riparian Management Areas, and applying RMOs as specified in Appendix D.

Long-Term Productivity

Long-term impacts on wildlife result from loss of old-growth habitat. Sitka black-tailed deer, brown bear, marten, and brown creeper depend on old-growth, and would experience some reductions in long-term habitat capability. Impacts would be greatest during critical times of the year (for example, winter for deer). Populations of brown bear and marten could decline further if roads were left open, as a result of human-related disturbance and mortality. None of the habitat or population declines are expected to result in any listings or local extinctions.

Long-term impacts also result from canopy closure in second-growth stands, which reduces habitat capability for deer, marten, and brown bear. Thinning second-growth stands could delay canopy closure, and would offset some negative impacts of post-harvest succession. The effects of canopy closure are expected to last from 30 to 100 years after initial harvest. See the Subsistence section for more information on canopy closure effects. See Appendix F, Figures 7 and 8, for additional information regarding stem exclusion phase effects.

Population Viability

Habitat (especially old-growth habitat) is the key to maintaining viable, well-distributed populations of vertebrate species. Old-growth habitats are conserved in the Project Area and across the Northeast Chichagof Island landscape area in non-development LUDs (Old-growth Habitat), and by application of standards and guidelines that retain old-growth characteristics in areas such as beach and estuary fringes.

The 1997 TLMP EIS found that the selected alternative (Alternative 11) provides a combination of land allocations that protects 70 percent of the productive old-growth existing in 1954 in natural setting (non-development) LUDs across the entire Tongass National Forest. This compares well with the 73 percent of the productive old-growth in natural resource setting LUDs across the Northeast Chichagof Island landscape area. (See Table 4-15 for additional information.) Over the long term (year 2095), 57 percent of the productive old-growth that existed in 1956 will still remain in development LUDs such as Timber Production.

Table 4-15
Acres and Percentage of Productive Old-growth (POG) 1956 to 2095 in Reserves and Matrix by WAA, Northeast Chichagof

WAA	POG Acres 1956	POG Acres and % 1995	POG Acres and % Remaining in yr. 2095	% POG in Reserves	% 1954 Matrix POG Remaining in yr. 2095
3523	24,695 100%	21,485 87%	19,509 79%	56%	63%
3524	6,922 100%	6,922 100%	5,953 86%	20%	83%
3525	41,080 100%	34,096 83%	27,934 68%	37%	56%
3526	22,734 100%	20,006 88%	16,823 74%	50%	58%
3551	33,658 100%	29,282 87%	24,234 72%	48%	56%
Totals	129,089 100%	111,791 87%	94,453 73%		

Source: 1997 TLMP EIS, Part I, page 3-386.

Notes: Reserves are defined as non-development LUDs, such as Old-growth Habitat.

Matrix lands are defined as development land designations, such as Timber Production.

Figures include only productive old-growth from National Forest lands.

The analysis assumes maximum timber harvest levels over the next 100 years.

Other Aspects of Population Viability

Old-Growth Forest Corridors

The modified 1997 Forest Plan includes a standard and guideline to provide corridors of old-growth forest among large and medium old-growth habitat reserves and other natural-setting LUDs (for example, Old-growth Habitat, LUD II, Wilderness, beach and estuary fringes, riparian buffers, and other lands unsuitable for development) at the landscape scale (USDA Forest Service 1999). An analysis was conducted to determine to what extent this project provided for such corridors. The analysis showed that forest connectivity exists among old-growth blocks in large and medium reserves and natural-setting LUDs on Chichagof Island. Within the Project Area, connectivity exists between small, medium, and large old-growth reserves as displayed in the alternative maps.

The Forest Service met with representatives from the interagency implementation team to review the extent to which the connectivity standard and guideline should be incorporated into the Indian River Project. (Note: the interagency meetings were held on September 23, 1997 with the U.S. Fish and Wildlife Service, Alaska Division of Governmental Coordination, Department of Fish and Game, and Department of Environmental Conservation; and on October 10, 1997 with the National Marine Fisheries Service and the Environmental Protection Agency.) The connectivity standard and guideline is being fully applied in this project.

Initially the USFWS expressed a desire that the connectivity standard and guideline should not only require connectivity between the large and medium old-growth reserves, but also connectivity with the small old-growth reserves, across the Tongass National Forest. Following the September 23 meeting, further discussion with the USFWS indicated that, while recognizing that connectivity among all of the old-growth reserves is not a requirement, they strongly encourage giving consideration to enhancing connectivity among reserves when moving small reserves at the project planning level. The USFWS also suggested moving the Project Area interior small old-growth reserve located in the western portion of VCU 2160 to the eastern portion of the VCU. The intent of moving the small old-growth reserve was to provide better connectivity between VCUs 2150 and 2160.

An analysis of mapped old-growth patches was conducted, which determined that the modified 1997 Forest Plan management objectives for small old-growth reserves are being met in all of the alternatives. Moving the interior small old-growth reserve from the western portion of VCU 2160 to the eastern portion was considered. However, the old-growth forest in the USFWS-proposed small old-growth reserve in the eastern portion of the VCU did not meet the specific design criteria for small reserves found in Appendix K of the modified 1997 Forest Plan.

Terrestrial Endemic Mammals

The modified 1997 Forest Plan (USDA Forest Service 1997) includes a standard and guideline requiring surveys for terrestrial endemic mammals (for example, shrews, voles, or mice specific to a certain area) on islands less than 50,000 acres in size. At 1,343,463 acres, Chichagof Island far exceeds the small island criteria to survey for terrestrial endemic animals. However, several small mammal surveys have been completed or are on-going on Chichagof Island. These surveys include the work done by Forest Service wildlife biologists in conjunction with ADF&G's marten study and as part of a planted spruce stock damage survey.

In addition, the University of Alaska, Fairbanks, in conjunction with University of Arizona, has conducted small mammal surveys on Chichagof Island. A graduate student also conducted small mammal surveys as part of the Kadashan Study south of the Project Area. None of the surveys have, to this point, identified any rare or endemic terrestrial mammal populations that may represent unique populations with restricted ranges on Chichagof Island.

A search of the literature related to terrestrial mammals on Chichagof Island did not reveal any small rare terrestrial mammals. It is therefore unlikely that endemic species are present that may be affected by this project.

The interagency implementation team reviewed the extent to which the endemic terrestrial mammal standard and guideline should be incorporated into the Indian River Project. The standard and guideline is being fully applied in this project.

Threatened, Endangered, and Alaska Region Sensitive Species

Direct, Indirect, and Cumulative Effects

No significant direct, indirect, or cumulative effects to Threatened, Endangered, and Alaska Region Sensitive Species are expected from this project. The U.S. Fish and Wildlife Service and National Marine Fisheries Service have concurred with the Biological Assessment/ Evaluation for listed species (see Appendix B).

Wildlife

Steller Sea Lion - Threatened

Harassment or displacement of Steller sea lions from preferred habitats by human activities (boating, recreation, aircraft, LTFs, and log raft towing) is a concern with regard to long-term conservation of the sea lion in Southeast Alaska. LTF construction and operation are unlikely to affect prey availability for Steller sea lions, since these and related activities are restricted to small, very localized areas of the marine environment. In addition, the permitting process for LTFs requires that monitoring be conducted to maintain water quality, marine circulation and flushing during construction and operation. There is no critical habitat (rookeries) near the LTFs or proposed camp location in Corner Bay.

Humpback Whale - Endangered

The only proposed activities that could result in harassment or disturbance of humpback whales are the development and use of LTFs and their associated camps, and the movement of log rafts from LTFs to mills. Construction and operation of LTFs and other docking facilities are restricted to small, localized areas of the marine environment. Construction and operation of LTFs are unlikely to affect prey availability for humpback whales.

Humpback whales could be disturbed by increased boat traffic associated with LTFs and logging camps. Disturbance impacts would be localized in nature, would be highly variable, and dependent on many factors, such as the size of the bay, water depth, number of boats, and individual behavioral responses of humpback whales. Behavioral responses could include sounding, breaching, evasive underwater maneuvers, and maintaining distance. Minimum separation distances are required by law.

Marbled Murrelet - Sensitive

Marbled murrelets are common in Southeast Alaska and nest in old-growth forest stands up to 53 miles from saltwater. They more commonly occupy larger stands (greater than 500 acres) than smaller stands (less than 100 acres). Since all inland forest stands in the Project Area are less than 53 miles from saltwater, all could be potential marbled murrelet nesting habitat. Without precise knowledge of marbled murrelet nesting habitat requirements, all old-growth habitat with greater than 8 mbf per acre is assumed to be suitable for nesting.

All action alternatives would harvest stands that may be capable of providing nesting habitat for these birds. The factors currently limiting marbled murrelets in Southeast Alaska have not been identified. Assuming that availability of nesting habitat is a limiting factor for the population, then a reduction in available nesting habitat could result in a reduction of the population. However, this relationship has not been quantified in Southeast Alaska.

In summary, the Indian River Project may affect marbled murrelets by reducing the amount of suitable nesting habitat, but the extent of this impact cannot be determined at this time. The Project Area is only a small fraction of the suitable habitat in Southeast Alaska, and any effects from this project would have minimal impact on the overall population in Southeast Alaska.

If an active nest is located during timber sale layout or harvest, the modified 1997 Forest Plan standards and guidelines specific to marbled murrelets would be implemented (see page 4-117, modified 1997 Forest Plan). Protective measures in the standards and guidelines include:

- maintaining a 600-foot radius of undisturbed forest habitat around the nest;
- minimizing disturbance activities within the buffer during the nesting season (May 1 to August 15); and
- monitoring the nest site for nesting activity for not less than two nesting seasons after nest discovery.

Northern Goshawk - Sensitive

Harvesting old-growth timber could reduce the quality and availability of nesting habitat for northern goshawk in the Project Area. Types of impacts from timber harvesting could include reduced foraging habitat quality, reduced prey densities, and increased competition from red-tailed hawks and other raptors (Crocker-Bedford 1990). These effects could potentially result in reduced population levels and reduced nesting success of northern goshawks (Crocker-Bedford 1990).

Northern goshawks are known to occur in the Project Area. Forest Service crews located two probable, inactive nest sites during goshawk surveys. Based on three years of intensive surveys, there is high confidence that timber harvest would not remove any active nest trees. There may be a reduction in the number of potential nest trees and a decrease in the amount of forage area of goshawks.

Any northern goshawks not discovered prior to timber harvest may be affected if a harvest unit corresponds to goshawk nesting habitat. In addition, old-growth forest throughout the Project Area provides potential nesting habitat for future nesting activities. Therefore, the Indian River Project could affect northern goshawks and their potential habitat.

If an active northern goshawk nest is located during timber sale layout or harvest, the modified 1997 Forest Plan standards and guidelines specific to this species would be implemented (see pages 4-90 and 4-91, modified 1997 Forest Plan). Protective measures in the standards and guidelines include:

- maintaining an area of not less than 100 acres of old-growth forest (if it exists) generally centered over the nest tree or probable nest site;
- permitting no commercial timber harvest within the 100 acres (although road maintenance may occur); and
- permitting no continuous disturbance likely to result in nest abandonment within the surrounding 600 feet of the nest site from March 15 to August 15.

There is a standard and guideline that applies only to Prince of Wales Island, in VCUs where over 33 percent of the productive old-growth forest has been converted to young conifer stands (for example, stands harvested since 1954). The Forest Service met with representatives from the interagency implementation team to review the extent to which this new direction should be incorporated into the Indian River Project. Since the project is not on Prince of Wales Island, the standard and guideline does not apply and will not be incorporated. (Note: the interagency meetings were held on September 23, 1997 with the U.S. Fish and Wildlife Service, Alaska Division of Governmental Coordination, Department of Fish and Game, and Department of Environmental Conservation; and on

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October 10, 1997 with the National Marine Fisheries Service and the Environmental Protection Agency.)

Fish

No Federally listed threatened or endangered fish species are known to occur in the Project Area. Therefore, no effects are expected.

Plants

No threatened or endangered plant species occur in the Project Area. No Forest Service Alaska Region sensitive plants occur in the Project Area.

Timber

Direct, Indirect, and Cumulative Effects.

Harvest by Volume Strata

Table 4-16 displays harvest acres and volumes by low, medium, and high volume strata for the action alternatives. (See Glossary for definition of volume strata.) Volumes shown are net sawlog plus utility in million board feet (mmbf). Since Alternative A does not propose timber harvest under this project, it is not displayed.

Throughout this section, harvest acres represent total unit acres for all units in a particular alternative. This is true, regardless of what percentage of harvest is proposed for the various units in that alternative. Acres would actually be less than what is displayed, since each action alternative contains units to be harvested by non-clearcut methods. See Appendix E for a list of harvest units by alternative, unit number, acres, volume, harvest method, logging system and percent of unit proposed for harvest.

Table 4-16
Harvest Acres and Volumes by Volume Strata

Alt.	Low Volume		Medium Volume		High Volume		Total	
	Acres	Volume (mmbf)	Acres	Volume (mmbf)	Acres	Volume (mmbf)	Acres	Volume (mmbf)
B	98	0.5	710	6.8	1,077	16.5	1,885	23.8
C	100	0.6	764	9.2	992	18.9	1,856	28.7
D	79	0.4	682	8.1	825	15.5	1,586	24.0
E	118	0.7	700	8.2	847	15.6	1,665	24.5
F	137	0.8	864	10.4	1,354	25.7	2,355	36.9

Source: Regan and Peterson 1997

Logging Systems

A variety of logging systems was considered for the Indian River Project (see Chapter 2). Each logging system has advantages, disadvantages, and constraints that limit its applicability. In this project, logging systems were selected that capture the advantages of each system within the applicable constraints. As a result, skyline, shovel, and helicopter logging systems are used in each action alternative. Table 4-17 displays logging system volumes and acreages for the action alternatives.

While helicopter harvest accounts for a relatively high percentage of total unit acres by alternative, actual volume harvested by helicopter makes up lower percentages of total alternative volumes. This is due to the high amount of non-clearcut harvest with helicopter, as compared with cable systems.

Table 4-17
Harvest Acres and Volumes by Logging System

	Alternative B		Alternative C		Alternative D		Alternative E		Alternative F	
	Volume (mmbf)	Acres	Volume (mmbf)	Acres	Volume (mmbf)	Acres	Volume (mmbf)	Acres	Volume (mmbf)	Acres
Cable	5.7	327	12.0	647	9.6	505	9.8	534	14.4	753
Cable/ Helicopter*	1.3	63	2.3	121	1.0	58	1.8	89	2.0	121
Helicopter	16.4	1,403	12.3	923	11.1	866	11.5	918	18.9	1,347
Shovel	0.4	28	1.7	90	1.7	84	1.1	55	2.7	136
Total	23.8	1,821	28.3	1,781	23.4	1,513	24.2	1,596	38.0	2,357

Source: Regan and Peterson 1997

* For harvest units in this category, most acreage would be cable logged, but one or more settings would be logged by helicopter.

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Species Composition and Silvicultural Systems

Each action alternative incorporates both even-aged and uneven-aged management. Even-aged management regenerates and maintains stands in which trees of essentially the same age grow together. For this project, even-aged methods are clearcutting with green tree retention, overstory removal, and patch clearcuts. While patch clearcuts technically may be a two-aged system, for the sake of simplicity they are considered an even-aged method in this project.

Uneven-aged management regenerates and maintains multi-aged (at least three age classes), multi-layered stands by removing either individual or small groups of trees in all age classes. Three or more harvest entries are made over a complete stand regeneration cycle. Uneven-aged methods are single tree selection and group selection. Uneven-aged management has not been formally tested in the hemlock-spruce forest type in Southeast Alaska. The feasibility of applying this silvicultural system under Alaskan climatic and economic conditions is unproven. Harvest unit layout, administration and logging costs for uneven-aged management are substantially higher than for clearcutting. Guldin (1996) reviewed a number of applications of uneven-aged management. He concluded that it usually takes twenty or more years before a scientifically supportable assessment can be made about this system's feasibility in a given forest type.

Table 4-18 shows the proposed harvest acres and volumes by silvicultural method for each action alternative. (Refer to Chapter 2 or the Glossary for descriptions of each method.) Table 4-19 shows species percentages to be harvested, by alternative.

Open conditions created in clearcuts allow both Sitka spruce and western hemlock to regenerate rapidly. Clearcutting with green tree retention would have basically the same effect on species composition as standard clearcutting. Even-aged stands are generally comprised of 10 to 75 percent (by volume) spruce, depending on the soil type and the age of the stand. The volume of spruce in even-aged stands 75 to 100 years after clearcut harvest averages about 50 percent (Taylor 1934) versus 28 percent in existing mature and over-mature stands. Spruce regeneration is further promoted by cable and shovel yarding when compared to helicopter harvest. With the use of silvicultural practices such as precommercial thinning, an additional increase in the spruce component is expected.

Table 4-18
Volume and Acre Comparison of Alternatives
by Even- and Uneven-Aged Silvicultural Systems

	Alt.	B	Alt.	C	Alt.	D	Alt.	E	Alt.	F
	Acres	Volume (mmbf)	Acres	Volume (mmbf)	Acres	Volume (mmbf)	Acres	Volume (mmbf)	Acres	Volume (mmbf)
Even-Age:										
Clearcut w/ Green Tree Retention	783	16.0	1,116	22.7	934	18.8	1,065	19.9	1,497	29.6
Overstory Removal	310	3.9	186	2.4	151	1.9	159	2.2	244	4.0
Patch Cut	117	0.8	167	1.4	121	1.0	85	0.4	310	2.1
Subtotal Even-Age	1,210	20.7	1,469	26.5	1,206	21.7	1,309	22.5	2,051	35.7
Uneven-Age:										
Group Selection	567	2.4	150	0.5	160	0.6	129	0.5	95	0.5
Single Tree Selection	44	0.6	162	1.2	147	1.1	157	1.2	211	1.8
Subtotal Uneven-Age	611	3.0	312	1.7	307	1.7	286	1.7	306	2.3
Total	1,821	23.7	1,781	28.3	1,513	23.4	1,595	24.2	2,357	38.0

Source: Regan and Peterson 1997

Table 4-19
Harvest Species Composition Percentages by Alternative

	Alt. B %	Alt. C %	Alt. D %	Alt. E %	Alt. F %
Western & Mountain Hemlock	81.7	81.9	82.4	83.3	81.7
Sitka Spruce	15.8	15.6	15.0	13.9	15.8
Alaska-Cedar	2.5	2.5	2.6	2.8	2.5

Source: Regan and Peterson 1997

Except for clearcutting with green tree retention, the regeneration methods for this project could influence resultant species composition in different ways. Because these methods are relatively new to this area, the actual changes are not quantified. The overstory removal and single tree selection methods may result in higher levels of western hemlock in the stands following harvest because the current understory is often dominated by hemlock. Unlike spruce, Western hemlock has the ability to grow under the canopy of larger trees with minimal light. This hemlock understory would be released from competition and likely grow to become the dominant tree species in the new stand, with mostly hemlock regenerating underneath. Spruce would remain a component of the stand but may be reduced.

The effects from group selection would vary by the size, aspect, orientation, and shape of the groups. In most areas, adjacent unharvested trees surrounding these groups would shade the forest floor. This would reduce growth rates and promote higher levels of hemlock relative to spruce. The larger openings (approximately 2 acres), designed with a circular shape that minimizes forest edge, may result in levels of spruce similar to clearcuts if located on southern exposures. This would also vary depending on the proximity of the group to larger residual trees providing seed. Thinning in these openings would also increase the spruce levels by favoring them as leave trees. The effects from small patch cuts would be similar to those for larger group selection openings. The effects from large patches would be the same as for clearcuts.

Implementing any one of the action alternatives would not result in a major effect on species composition in the second-growth stands. Some changes may occur in individual units, but over the entire area of harvest the changes would be minor for any alternative. Alternative F, which would harvest the most acres and volume by clearcut and patch cut, would also likely have the greatest effect on species composition in the new stands. Some increase in the spruce component could be expected. Alternative C, with the next highest volumes from clearcuts and patch cuts, may result in a higher than current percentage of spruce in the second-growth stands. Alternatives B, D, and E would have little effect on species composition, with Alternative B having the least effect of the action alternatives.

Forest Structure

In the broadest sense, structure is the horizontal and vertical distribution of components of a forest stand. These components include height, diameter, crown layers and stems of trees, shrubs and herbaceous understory, snags, and down woody debris (SAF 1994). The discussion of structure here is limited to tree height and diameter characteristics.

Following clearcut harvest, most second-growth stands will exhibit less variation in tree diameter and height than the mature and over-mature stands they replace. At 200 years of age, average diameters for unmanaged second-growth stands will range from 11 inches on medium to 24 inches on high productivity sites (Russell, pers.com.). These diameters can be increased with precommercial and commercial thinning.

Overstory removal, patch cuts, group selection, and single tree selection will all produce stands with a wider variety of diameters in the second-growth stand. These methods should

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provide more structural diversity (wider range of tree heights and diameters) than either the traditional clearcut method, or clearcut with green tree retention.

Implementing Alternative F, which would harvest the most volume by clearcut, would result in the least structural diversity in the second growth stands. Implementing Alternative B, which would harvest the least volume by clearcut and the most volume by uneven-aged methods, would result in the most structural diversity in the new stands.

Long-Term Productivity

The effects of all action alternatives on long-term timber productivity would be the conversion of unmanaged, overmature old-growth stands to managed, faster growing second-growth stands.

All stands proposed for harvest are overmature (in other words, in a stage of decline in vigor and soundness). Most are representative of uneven-aged western hemlock stands. Such stands commonly take hundreds of years to develop under natural conditions, unless they are changed by natural stand replacement events such as windthrow or manipulated by intensive forest management practices.

Log quality is determined by the grade and size of a log, and the amount of defect it contains. High grade, large diameter, and low percentage of defect are desirable characteristics. Log quality in second-growth stands is expected to be lower than in mature and over-mature stands, even on sites that have been precommercially thinned. However, total yield per acre is expected to be significantly higher in second-growth stands. ("Yield" refers to the merchantable timber volume that an area has produced or is capable of producing over a given period of time.) The lower quality of the second-growth timber stands will be reflected in the log grades and sizes, with fewer high grade, large diameter logs than existing mature and overmature stands.

The long-term result of precommercial thinning is the production of more useable fiber. Precommercial thinning also produces merchantable-sized logs sooner, which allows the option of either reducing the harvest age or producing larger trees in the current or an extended rotation age. Larger trees would improve log quality somewhat in producing larger logs that are more valuable for sawtimber.

Total yield per acre and log quality in second-growth would vary by silvicultural method. Overstory removal would produce the highest second-growth yield because of the advanced stage of the regeneration. However, logging damage may reduce log quality. Clearcutting with green tree retention would enable rapid growth rates with the potential to produce large trees. Diseased trees would be removed from the existing stand. Growth following single tree and group selection harvests may be lower than in clearcut stands but would still be rapid near the center of the groups where competition from the edge is reduced. Growth following small patch cuts (up to three acres) will generally resemble that of a group selection opening. Growth following large patch cuts (four to ten acres) will resemble that of a clearcut. Log quality would be less where competition reduces growth, and in residual stands where disease such as mistletoe remains.

Cumulative Effects

Cumulative effects to the timber resource are analyzed through the year 2007; apart from this project, there are no further timber sales planned for the Project Area through that year. For the larger Northeast Chichagof Area, the portion of the Eight Fathom Project south of the Portage and the Iyouktug Project are also considered in the cumulative effects analysis. These are the only other projects now scheduled for this area. Planned harvest beyond the year 2007 will be determined through future timber sale planning.

Of the approximately 38,000 acres of non-National Forest lands in the Northeast Chichagof area, nearly 31,000 acres are owned by the Huna Totem and Sealaska Native Corporations. As of 1996, approximately 7,300 acres of these lands had been harvested, with most of the harvest (approximately 6,800 acres) occurring on Huna Totem lands. If cutting on these lands continues at past levels, approximately 14,500 acres of Native Corporation lands in the Northeast Chichagof Area will be harvested by the year 2010.

The harvest units for the Indian River project encompass different methods as well as amounts of harvest. The most notable is group selection, where approximately 20 percent of a unit's acres would be cut in this entry. Eventually the entire stand would be harvested but the logging is staggered over 160 to 200 years, with a total of four or five entries. This means that approximately 80 percent of the group selection acres would not be considered for harvest before the year 2010 (the projection of these cumulative effects). For purposes of this analysis, however, all previous and planned harvest acres are considered harvested regardless of what percentages of the unit acres are actually prescribed for cutting under this project.

Implementing Alternative F, which would result in harvest of the most acres by 2010, would have the greatest cumulative effect on the timber resource. Alternative E, which would harvest the fewest acres by 2010, would have the least cumulative effect of the action alternatives. Tables 4-20 and 4-21 display the cumulative acres of harvest by alternative for the Project Area and for the Northeast Chichagof area, respectively. All acreages shown are National Forest lands only.

Table 4-20
Cumulative Acres of Harvest by Year 2010 for the Project Area

Alt.	Previous Harvest Acres	Proposed Harvest Acres	Total Harvest Acres	Percent Cumulative Harvest		
				Tentatively Suitable 14,082 Ac. %	Productive Forest Land 18,084 Ac. %	Total Land Area 35,723 Ac. %
A	2221	0	2221	15.8	12.3	6.2
B	2221	1,885	4,106	29.2	22.7	11.5
C	2221	1,856	4,077	28.9	22.5	11.4
D	2221	1,586	3,807	27.0	21.0	10.7
E	2221	1,665	3,886	27.6	21.5	10.9
F	2221	2,355	4,576	32.5	25.3	12.8

Source: Regan and Peterson 1997

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Table 4-21
Cumulative Acres of Harvest by the Year 2010 for the Northeast Chichagof Area

Alt.	Previous Harvest Acres	Proposed Harvest Acres		Total Harvest Acres	Percent Cumulative Harvest		
		Eight Fathom & Iyoutug *	Indian River		Tentatively Suitable 108,062 Acres %	Productive Forest Land 130,295 Acres %	Land Base 231,809 Acres %
A	17,888	3,531	0	21,419	20.8	16.4	9.2
B	17,888	3,531	1,885	23,304	22.6	17.9	10.0
C	17,888	3,531	1,856	23,275	22.6	17.9	10.0
D	17,888	3,531	1,586	23,005	22.3	17.7	9.9
E	17,888	3,531	1,665	23,084	22.4	17.7	10.0
F	17,888	3,531	2,355	23,774	23.1	18.2	10.3

Source: Regan and Peterson, 1997

All acres are National Forest Lands only

* For the Eight Fathom Project south of the Portage, 13.6 mmbf from 904 acres are proposed for harvest. For the Iyoutug Creek Project, using the mid-range of target volume estimates and the average volume-to-acres ratio for the Indian River alternatives, approximately 38.9 mmbf from 2,627 acres could be harvested. Acreage figures for both projects represent total unit acres. Actual harvest acres would be fewer, depending on the mix of clearcut and non-clearcut units.

Financial Efficiency Analysis of Timber Harvest

A financial efficiency analysis was done to compare benefits and costs of this timber sale project. This analysis was conducted by subtracting estimated logging and transportation costs (including road construction) for an operator of average efficiency from the pond log value for each action alternative. Pond log values represent the market value for wood products minus the average manufacturing cost for those products. Variations in logging systems, log haul distance, road construction and reconstruction costs, and LTF construction costs affect logging and transportation costs for each alternative.

The following three methods were analyzed for comparison:

- mid-market assessment, which is designed to average market fluctuations;
- the current value assessment, which is used to reflect the most current market conditions; and
- SNAP analysis (see Chapter 4 Transportation section, Road and Unit Network Analysis).

The Forest Service Handbook directs the use of a mid-market economic assessment to "provide a more consistent economic estimate of the project during the development process" (R10 Supplement 2409.18-97-1, effective June 13, 1997). The mid-market assessment uses the weighted average of quarterly pond log values from the first quarter of 1979 to the quarter in which the Notice of Intent (NOI) is issued (see Table 1-3 in Chapter 1). An allowance of 60 percent of normal profit and risk is also included as a cost and subtracted from the pond log values. The assessment provides estimates of the value of the timber under average market conditions. Stumpage values would be higher under better-than-average market conditions and lower during poor market conditions.

The current value assessment is conducted to reflect recent market conditions. For this assessment, a normal profit and risk allowance is included as a cost. In recent months, the selling values have been lower than average. Therefore, the current value assessment results are lower than the mid-market. At the time of a timber sale, a more thorough and detailed appraisal would be done. This timber sale appraisal would use the most up-to-date timber selling values and logging and road costs to determine the net stumpage value.

Table 4-22
Mid-Market Analysis Summary by Alternative:
Dollars per mbf

	Alt. B	Alt. C	Alt. D	Alt. E	Alt. F
Sawlog Volume (mmbf)	19.1	23.0	19.2	19.6	29.5
Sawlog + Utility (mmbf)	23.8	28.7	24.0	24.5	36.9
Pond Log Value	\$257	\$257	\$257	\$257	\$257
Total Harvest Cost	\$405	\$377	\$379	\$377	\$368
Profit and Risk Margin ¹	\$49	\$50	\$49	\$50	\$51
Net Stumpage ²	(\$197)	(\$170)	(\$171)	(\$170)	(\$160)
Relative Ranking	5	2/3	4	2/3	1

Source: Regan and Peterson 1997

Note: Parenthesis () indicates negative value.

1. 60 percent of normal profit and risk.

2. Net Stumpage = Pond log values less total harvest costs less profit and risk.

All three analyses resulted in the same relative rankings. The results of the mid-market assessment and relative ranking of the action alternatives are displayed in Table 4-22. It is important to recognize that these values represent very preliminary approximations to be used for comparison of alternatives only.

The major factors affecting net stumpage values among the action alternatives are transportation costs (hauling), road construction and bridge costs, and helicopter versus ground-based yarding system costs. Alternatives with longer haul distances, more miles of road construction, more bridges, and more helicopter yarding yield the lowest net stumpage values.

Based on this preliminary analysis, no alternative would result in a positive net stumpage value in the relatively weak current market. The negative mid-market values for these alternatives indicate that they also would be uneconomical based on average market values. Under strong market conditions, some or all of the alternatives may be economic. In recent years, sales with negative mid-market analysis results and negative timber sale appraisal stumpage values have sold. Some of these have sold for over \$100 above the minimum bid rate. This indicates that appraisal results alone are not a definitive, final determination of a sale's economic viability. Operator efficiency, competitive bidding, market trends and predictions, and other factors influence timber sale economics.

Proposed Acres of Planting and Precommercial Thinning

Acres proposed for planting and precommercial thinning (past harvest units and surveys of past harvest units) are listed in Chapter 2 and in Appendix C.

Units harvested under this project would be surveyed and evaluated for thinning in 20 to 25 years following harvest. Actual units to be thinned would be decided at that time.

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NOTES

Subsistence

Direct, Indirect, and Cumulative Effects

Section 810 of the Alaska National Interest Lands Conservation Act (ANILCA) requires a Federal agency having jurisdiction over lands in Alaska to evaluate the potential effects of proposed land-use activities on subsistence uses and needs. The evaluation determines whether subsistence uses in the Project Area or portions of the Project Area may be significantly restricted by any of the proposed action alternatives.

This evaluation results in two determinations: the direct effects of the action alternatives on subsistence resources; and the cumulative effects of past, present, and reasonably foreseeable activities on subsistence resources over broader geographic areas.

Three data sources are used in this analysis: (1) the Tongass Resource Cooperative Study (TRUCS), which maps subsistence use areas in the Project Area; (2) wildlife habitat capability models, which estimate the Project Area's ability to support wildlife populations; and (3) ADF&G hunter survey data, which are used to estimate future demand for subsistence resources.

The effects of the proposed alternatives were evaluated using the following criteria:

- changes in distribution or abundance of subsistence resources;
- changes in competition from non-subsistence users for those resources; and
- changes in access to subsistence resources.

For some subsistence resources (for example, furbearers and brown bears), the effects of changes in access are so inseparably related to distribution and abundance as to require presenting jointly in the following discussions. (See Appendix F for additional subsistence information.)

Sitka Black-tailed Deer: Abundance and Distribution

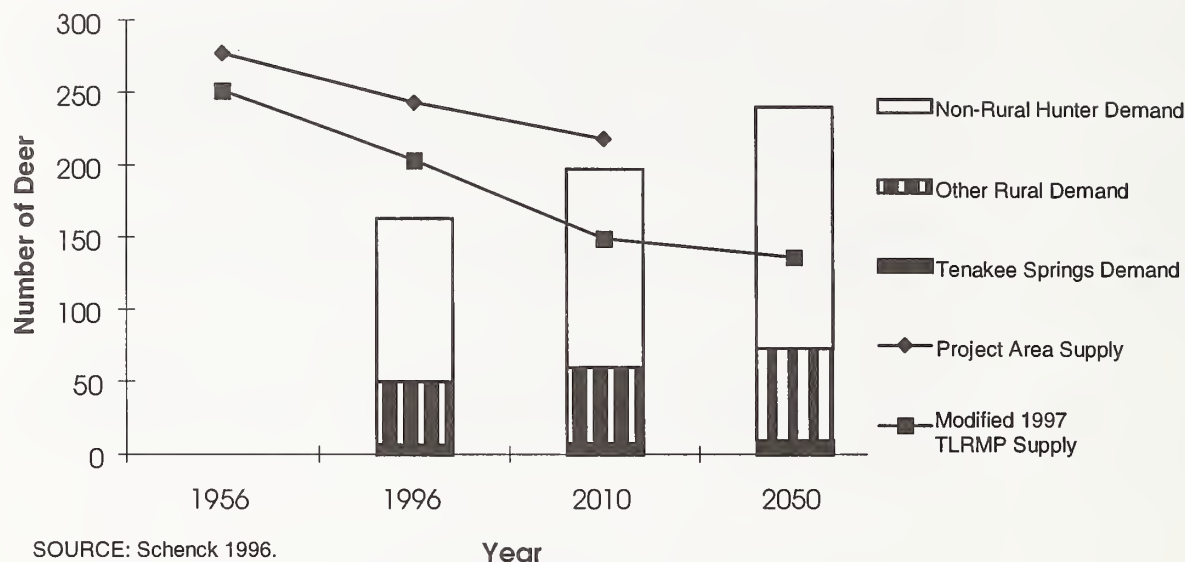
Deer are an important subsistence resource used by rural communities in the vicinity of the Project Area. An analysis of deer habitat capability model estimates and ADF&G hunting information was done to compare the estimated supply and demand for deer. The Project Area encompasses three Wildlife Analysis Areas (WAA) as delineated by ADF&G: 3523, 3525, and 3526. (See Subsistence section in Chapter 3, which includes map of WAA boundaries.) Specifically, the analysis examined:

- the estimated effects of the proposed project on each WAA's ability to support deer populations;
- the estimated effects on deer carrying capacity based on implementation of the modified 1997 Tongass Land and Resource Management Plan; and
- the projected demand for deer for subsistence and non-subsistence uses if the distribution of hunting activity remains constant, but total demand increases with human population growth.

Current deer habitat capability within the Project Area would be reduced by 7 percent or less under any of the timber harvest alternatives (Table 4-23). Cumulatively, habitat capability reductions in all of WAAs 3523, 3525, and 3526 from past and currently proposed actions range from 8.4 percent in Alternative A (no-action) to 9.7 percent in Alternative F (the action alternative associated with the greatest reduction in deer habitat).

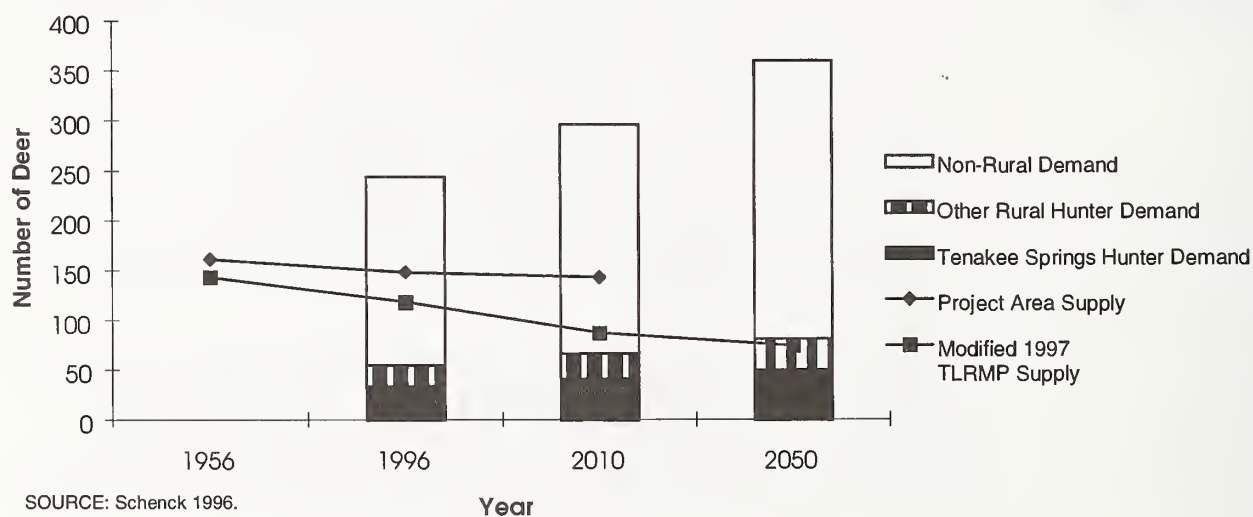
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Figure 4-2 WAA 3525 Estimated Deer Supply and Demand



Note: Bars in Figures 4-2 and 4-3 represent estimated and projected deer harvest demands. Harvest demand for 1996 is based on average annual harvest between 1990 and 1995. Projected harvest demand assumes that residents continue to use the areas from which they presently harvest 90 percent of their deer, and demand for deer increases with projected community population growth at 14 percent per decade. The "Project Area Supply" line displays 10 percent of the estimated habitat capability for deer in (1) 1956 before any timber harvest; (2) in 1996; and (3) in 2010 for the "worst case" alternative (Alternative F). The "modified 1997 TLRMP Supply" line displays 10 percent (one measure of the harvestable amount) of the current estimated deer habitat capability at years 2010 and 2050.

Figure 4-3 WAA 3526 Estimated Deer Supply and Demand



Analysis results indicate that deer in WAA 3525 are being harvested within sustainable levels (Figure 4-2). The estimated number of deer available for harvest is considered to be sufficient to meet current subsistence and non-subsistence demand. The projected number of deer available for harvest in the years 2010 and 2050 would be sufficient to meet projected subsistence demands, but not projected non-subsistence demands under all alternatives by the year 2010.

WAA 3526 is currently being harvested at greater than sustainable levels (Figure 4-3). The estimated number of deer available for harvest is sufficient to meet current subsistence demand but is insufficient to meet non-subsistence demand. The projected number of deer available for harvest would be sufficient to meet subsistence demands under all alternatives (including the no-action alternative) in the year 2010, but not sufficient to meet increased subsistence demands by 2050.

Subsistence Use of Deer by Rural Communities

Angoon, Hoonah, and Tenakee Springs qualify as subsistence communities, and derive a portion of their deer harvest from the Project Area. Juneau does not qualify as a subsistence community, but does harvest a large percentage of the deer from the Indian River Project Area.

The following community subsistence analysis draws on three data sources: the Tongass Resource Cooperative Study (TRUCS), ADF&G harvest data, and the modified 1997 Forest Plan (USDA Forest Service, 1997). TRUCS data maps of the Project Area are displayed in Appendix F for the rural communities of Angoon, Hoonah, and Tenakee Springs. Each map shows overlap with harvest areas of Hoonah and Tenakee Springs, with the broadest overlap being Tenakee Springs. The alternatives were ranked considering impacts to deer habitat, accessibility, and overlap with current use. The resulting ranking, from lowest to highest impact, is: Alternative D, B, C, E, and F.

The ADF&G harvest data (the comparison by WAA of estimated supply and demand for deer -- Figures 4-2 and 4-3) help answer the question of whether the proposed project would reduce the number of available deer below projected subsistence demands.

The modified 1997 Forest Plan data were used to compare the estimated supply and demand for deer for the area from which a particular community currently harvests 90 percent of its total deer. The figures below include the estimated effects on the area's ability to support deer populations if the modified 1997 Forest Plan is implemented. The figures also display the estimated demand for deer for the same area, assuming demand increases with population growth. These data help answer the question of whether the cumulative effects of past activities, proposed actions, and modified 1997 TLRMP implementation will reduce the number of deer available to a number below subsistence demands in each community's primary use area.

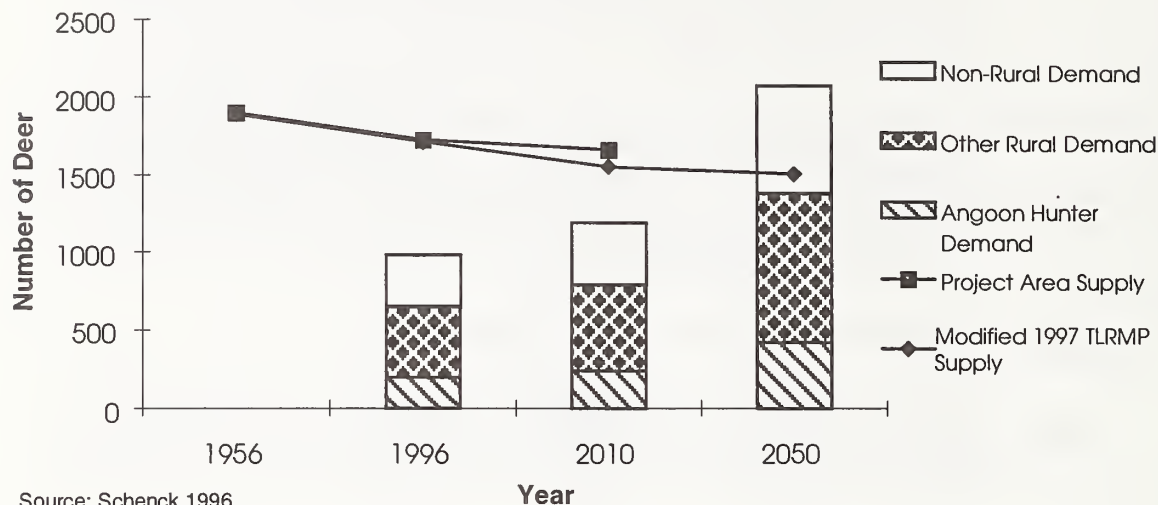
Angoon

Angoon residents usually hunt the shoreline and beach fringe in Freshwater Bay (6 to 15 percent of households) and along Chatham Strait and False Bay (1 to 5 percent of households). There are no harvest units in the area where Angoon residents hunt (see Figure 4-4). Harvest units in VCU 2221 that are nearest to saltwater are adjacent to areas where 1 to 15 percent of Angoon households reported hunting.

Angoon's principal use of the Project Area for deer hunting takes place in WAA 3525. Angoon harvests an average of less than 1 percent of its deer from this WAA. Projected habitat capability is sufficient for both subsistence and non-subsistence use.

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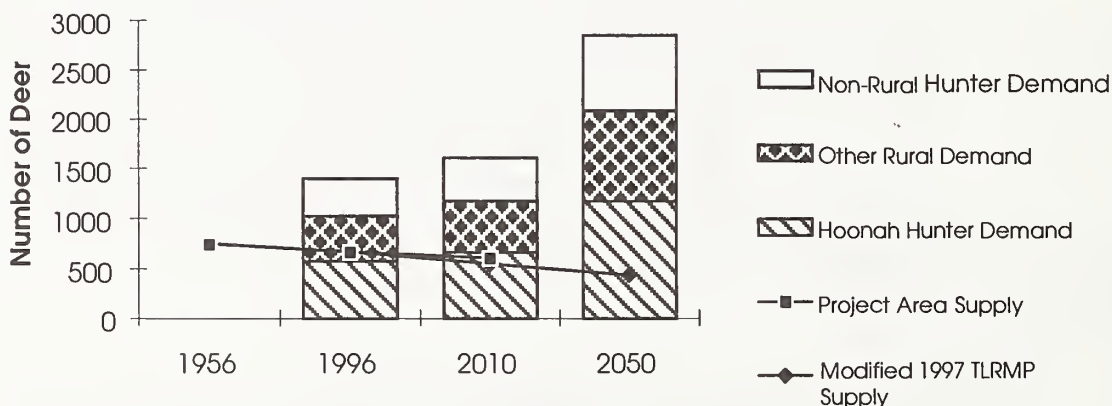
Figure 4-4 Estimated Deer Availability and Demand in Areas Used by Angoon Residents



Source: Schenck 1996.

Note: Bars in Figures 4-4 and 4-5 represent estimated and projected deer harvest demands. Harvest demand for 1996 is based on average annual harvest between 1990 and 1995. Projected harvest demand assumes that residents continue to use the areas from which they presently harvest 90 percent of their deer, and demand for deer increases with projected community population growth at 14 percent per decade. The "Project Area Supply" line displays 10 percent of the estimated habitat capability for deer in (1) 1956 before any timber harvest; (2) in 1996; and (3) in 2010 for the "worst case" alternative (Alternative F). The "modified 1997 TLRMP Supply" line displays 10 percent (one measure of the harvestable amount) of the current estimated deer habitat capability at years 2010 and 2050.

Figure 4-5 Estimated Deer Availability and Demand in Areas Used by Hoonah Residents



Source: Schenck 1996.

NOTE: Data is displayed only for those WAAs that accounted for 90 percent of the total deer harvest for this community (WAAs 3523, 3524, 3525, 3351, 4222, 4252, and 4253).

Figure 4-4 shows the estimated demand for deer by Angoon residents and other subsistence and non-subsistence users. Also shown is the projected number of deer available for harvest assuming the greatest projected habitat reduction under the action alternatives (Alternative F). None of the alternatives significantly affect Angoon's ability to meet its deer harvest requirements.

Based upon the limited use of the Project Area by Angoon residents and lack of direct project effects on Angoon deer harvesting in the Project Area, there is no significant possibility of a significant restriction of subsistence use of deer by Angoon residents associated with the proposed actions.

Hoonah

Use of the Project Area by residents of Hoonah is not extensive. They harvest about 10 percent of the total community deer harvest from the Project Area. All of the action alternatives include harvest units located in areas used by Hoonah residents for deer hunting (see Appendix F-4B). Overlap of proposed harvest units and roads with areas used by the greatest percentage of Hoonah households (1 to 5 percent of households) occurs in VCU 2160.

Within the Project Area, WAA 3525 currently provides the largest number of deer for Hoonah residents. The data in Figure 4-5 displays the projected number of deer available for harvest under Alternative F. According to the data, supply is sufficient to meet current demand.

Figure 4-5 also displays the estimated supply and demand for deer in the WAAs that account for 90 percent of the total deer harvest by Hoonah residents and other subsistence and non-subsistence users. None of the Project alternatives significantly affect Hoonah's ability to meet its deer harvest requirements.

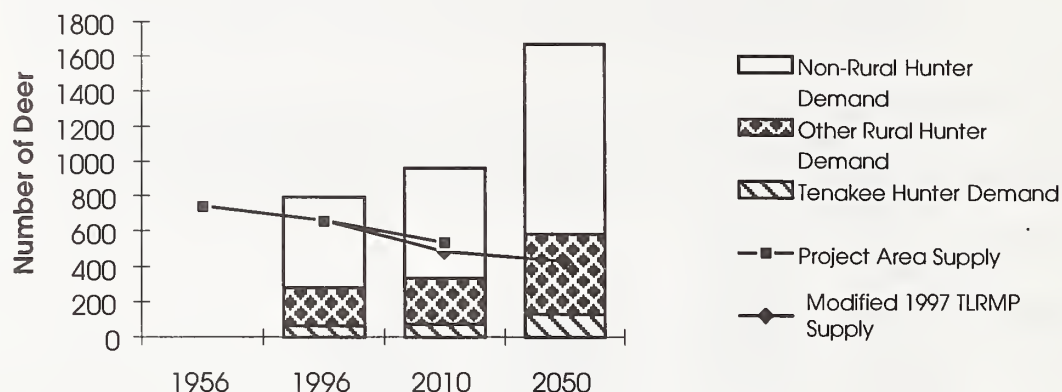
In addition, Figure 4-5 shows the estimated deer available for harvest if the modified 1997 Forest Plan is implemented. According to these projections, demand continues to increase and habitat capability becomes insufficient to meet projected demand for subsistence uses by the year 2050, assuming subsistence users do not shift their hunting elsewhere.

Implementing any of the action alternatives would reduce the potential number of deer available for harvest. Based on the effects of implementation described above, however, there is not a significant possibility of a significant restriction of subsistence use of deer for Hoonah residents due to this project alone. Cumulatively, there may be such a possibility for Hoonah deer hunters at some time in the future.

It may be possible to minimize the significant possibility of a significant restriction by continuing to regulate non-subsistence uses of areas most heavily used by Hoonah residents for deer hunting.

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Figure 4-6 Estimated Deer Availability and Demand in Areas Used by Tenakee Springs Residents

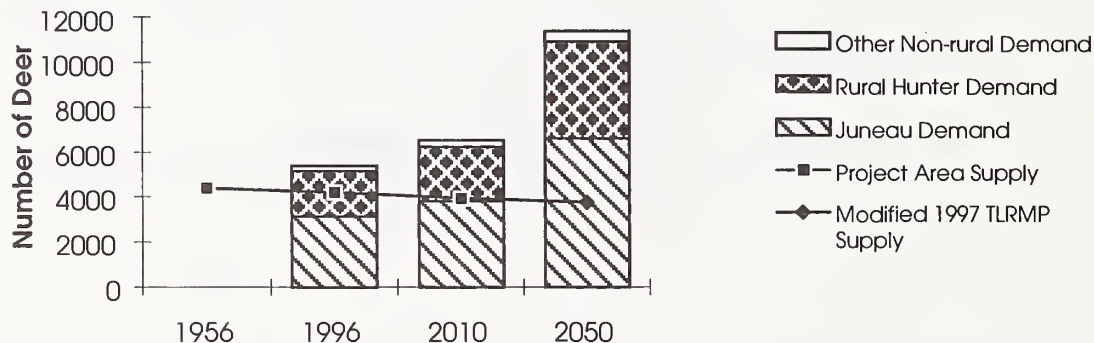


SOURCE: Schenck 1996.

NOTE: Data is displayed only for those WAAs that accounted for 90 percent of the total deer harvest for this community (WAAs 3525, 3526, 3627, 3628, 3629, and 3630).

Note: Bars in Figures 4-6 and 4-7 represent estimated and projected deer harvest demands. Harvest demand for 1996 is based on average annual harvest between 1990 and 1995. Projected harvest demand assumes that residents continue to use the areas from which they presently harvest 90 percent of their deer, and demand for deer increases with projected community population growth at 14 percent per decade. The "Project Area Supply" line displays 10 percent of the estimated habitat capability for deer in (1) 1956 before any timber harvest; (2) in 1996; and (3) in 2010 for the "worst case" alternative (Alternative F). The "modified 1997 TLRMP Supply" line displays 10 percent (one measure of the harvestable amount) of the current estimated deer habitat capability at years 2010 and 2050 (Flynn and Suring 1993).

Figure 4-7 Estimated Deer Availability and Demand in Areas Used by Juneau Residents



SOURCE: Schenck 1996.

NOTE: Data is displayed only for those WAAs that accounted for 90 percent of the total deer harvest for this community (WAAs 2621, 2722, 3308, 3309, 3417, 3420, 3523, 3524, 3525, 3526, 3627, 3551, 3627, 3629, 3835, 3836, 3837, 3938, 3939, 4043, 4044, 4055, 4145, 4146, 4147, 4148, 4149, 4150, 4222, 4252.)

Tenakee Springs

Tenakee Springs residents use the Project Area extensively (Appendix F-4C). Between 1990 and 1995, residents harvested 21 percent of their deer from WAAs 3525 and 3526. Habitat capability in all WAAs used by Tenakee Springs are currently estimated to be sufficient to meet subsistence demands, but are not sufficient to meet all demands (see Figure 4-6). All of the action alternatives include harvest units located in areas used by residents of Tenakee Springs for deer hunting.

The area in which Tenakee Springs residents harvest 90 percent of their deer is able to support sufficient deer to meet all current subsistence demands, but is unable to meet non-subsistence demands. All of the action alternatives would reduce habitat capability, but would not have a substantial effect on the supply of deer to meet subsistence demands until 2050. The major change projected is the increase in subsistence and non-subsistence demand (Figure 4-6).

Based on the direct effects described above, there is no significant possibility of a significant restriction of subsistence use of deer for Tenakee Springs residents due to this project alone. Cumulatively, there is a significant possibility of a significant restriction at some time in the future, due to an ever increasing human population and associated hunting demand and declining deer habitat capability.

Juneau

The number of deer harvested by Juneau sport hunters represents 64 percent of all of the deer harvested in those portions of WAAs 3525 and 3526 within the Project Area. However, this represents only 3 percent of the total deer harvested by Juneau hunters. Habitat capability in these WAAs is currently sufficient to meet Juneau hunter demand, but is not sufficient to meet all demands (Figure 4-7). All of the action alternatives would reduce deer habitat capability. In the future, habitat capability will not be sufficient to meet the increased demand from an ever-increasing human population.

Other Resources: Abundance and Distribution

Furbearers

Furbearers such as marten and otter are presently being trapped in the Project Area. This analysis assumes most of the trappers are from the surrounding rural communities, since trapping on Federal lands is restricted to rural residents only. Table 4-23 indicates that furbearer habitat capability under all alternatives would be sufficient to sustain the 1990 to 1995 average harvests.

The effects of improved road access were considered in determining project effects on subsistence resource abundance and distribution. Since current Federal Subsistence regulations prohibit the use of motor vehicles for trapping furbearers on Northeast Chichagof Island, increased road construction would not result in additional vehicle access for furbearer trapping by subsistence users.

When considering only the direct effects of timber harvest and road construction, this project would not likely result in a significant possibility of a significant restriction to subsistence users. This finding is based on the roads not being connected to a major community and not being connected to a ferry route or terminal.

Considering the cumulative effects, however, there is already a restriction on the subsistence use of motor vehicles for trapping furbearers, and this restriction is likely to continue into the future. (See Table 4-24 for a summary of findings regarding significant restrictions of subsistence use.)

Table 4-23

Northeast Chichagof Landscape Area¹: Average Harvest Levels of Selected Subsistence Species Compared with Habitat Capability

	Deer	Brown Bear	Marten	Otter
Average Harvest per year (1990 to 1995)	910	12	60	6
Population Needed to Support Harvest	9100	300	155	120
Habitat Capability in 1956	8817	407	584	253
Habitat Capability in 1996 (Alt. A)	8000	381	403	210
Habitat Capability by Action Alternative:				
B	7938	379	386	209
C	7944	379	387	209
D	7954	379	389	209
E	7956	379	390	209
F	7924	378	383	208

Source: Schenck 1996

¹ The Northeast Chichagof landscape area includes WAAs 3523, 3524, 3525, 3526, 3551, and 3630.

Brown Bear

Rural residents within Game Management Unit 4 (Admiralty, Baranof, and Chichagof Islands) and the residents of Kake are allowed to harvest brown bear for subsistence purposes under Federal subsistence regulations. Others may harvest bear under the general provisions of the State. Brown bear are generally not considered a food source, but rather a very limited use is made of parts of the bear for cultural purposes. Sport hunters harvest most bears taken in the Project Area (Faro 1996, personal communication).

Table 4-23 displays the brown bear harvest from Northeast Chichagof Island (which includes the Project Area) from 1990 to 1995. The table indicates that brown bear abundance under all alternatives would be sufficient to sustain the average annual harvest. An average of 12 brown bears, or approximately 3 percent of the existing habitat capability, was harvested per year between 1990 and 1995. The sustainable harvest level for brown bears is variable depending on the suitability of habitat conditions, but is generally considered to be 4 percent (Schenck, 1996).

Federal Subsistence regulations currently prohibit the use of motor vehicles for hunting bears on Northeast Chichagof Island. This restriction is likely to continue into the foreseeable future. With the regulations that are currently in place, increased road construction would not result in additional vehicle access for bear hunting by subsistence users.

When considering only the direct effects of timber harvest and road construction, this project would not likely result in a significant possibility of a significant restriction to subsistence users of brown bears. However, when considering the cumulative effects of past timber harvest and road construction, current activities outside the Project Area, and reasonably foreseeable activities, there is a significant possibility for a significant restriction. (See Table 4-24.)

Marine Mammals

Federal law prohibits the taking of marine mammals by anyone other than Native hunters. There is no evidence that timber harvest activities have had any effects on marine mammals taken for subsistence, nor on their habitat. There are no foreseeable impacts from the proposed actions on marine mammals.

Salmon

Salmon are a major subsistence food harvested in the Indian River Project Area. The Fisheries section of this chapter concludes that no quantifiable effects are expected on salmon and trout spawning and rearing habitat. All salmon spawning and rearing streams (Class I and Class II streams) near proposed harvest units are protected by buffers of at least 100 feet as prescribed in the TTRA. In addition, specific prescriptions for protecting salmon habitat were incorporated, if needed, during the design of harvest units and roads (see road and unit cards in Appendices I and J). By implementing these site-specific protection measures, any immediate or foreseeable effects on the abundance and distribution of salmon for subsistence uses in the Project Area would not be measurable.

Shellfish

The Transportation System section of Chapter 4 indicates that less than 1 percent of the Project Area estuarine habitat would be affected by LTF construction under any of the alternatives. LTF sites are proposed at Sunshine Cove, Sunny Too, and 10-Mile Creek. In general, the operation of LTFs results in small effects to benthic organisms. Sunshine Cove and Sunny Too are near subsistence crabbing sites. The proposed LTF sites would deposit bark on marine and estuarine habitat, potentially changing habitat for crabs and benthic organisms. The effect of the LTF sites on the abundance and distribution of local crabs, clams, and other shellfish would not be measurable for purposes of subsistence. The project effects for the foreseeable future would not be significant.

Other Finfish

The action alternatives for the proposed project would have no immediate or foreseeable effect on other finfish habitat. Because there would be no effect on their habitat, the abundance and distribution of these species would not be affected.

Other Subsistence Food Resources

Other foods include plants such as kelp, goose tongue, and a variety of berries. Most gathering of such traditional food occurs near beach and estuarine areas. Road construction activities may improve access to berry-picking sites that are not now reasonably accessible. Since the proposed timber harvest would not significantly impact beach fringe and estuaries, and since additional food gathering sites would be made available, the abundance and distribution of other foods are not expected to be substantially affected by the project or by cumulative effects of this and other reasonably foreseeable projects.

Firewood

The Forest Service has a free-use policy for firewood and timber. None of the alternatives would have an adverse effect on the availability of firewood and personal-use timber. Construction of a low-angle slide at the LTF site could make personal-use timber more accessible to individuals.

4 Environmental Consequences

Competition

Increased competition for subsistence resources could occur temporarily from logging camp residents. Timber harvest has occurred in the Project Area in the past, and local residents reported the perception of displacement and crowding due to the presence of logging camp residents. The roads brought better access into newly roaded areas and local hunters began to compete more with each other and hunters from elsewhere in the Project Area.

Competition by non-rural hunters is a concern because non-rural residents harvest the majority of deer from the Project Area (see the Subsistence section in Chapter 3). Section 804 of ANILCA gives the Federal Subsistence Board the authority to regulate non-rural harvest of deer, and to prioritize the harvest of deer among rural residents when necessary to protect the resource. The current deer population level does not necessarily require restrictions on non-rural users. However, the Federal Subsistence Board did restrict hunting by non-rural hunters in GMU 4 in regulatory years 1991 and 1992.

There is no evidence to indicate that salmon, finfish, shellfish, or other food resource availability to subsistence users would be affected by non-rural harvest. Any increase in competition from non-rural residents and Alaska non-residents would not be substantial because of the availability of resources in the immediate vicinity and in the surrounding areas.

Individual household use of specific areas may be displaced by some of the action alternatives. There is not sufficient information available nor would it be practical to evaluate displacement potential for individual households. The Project Area's remoteness makes it very unlikely that an individual household or even an entire community is highly dependent on specific areas within the Project Area that may be impacted by timber harvest or road construction activities. Generally, there are sufficient lands available elsewhere within or outside the Project Area for subsistence gathering. Any displacement that may occur is likely to be to other areas within a household's or community's historical range. Furthermore, any displacement that may occur would likely be temporary until timber management activities within the Project Area conclude in 3 to 5 years.

Access

Access to subsistence-use areas may be affected where short-term logging activities (such as LTFs) are located in the beach fringe. Less than 1 percent of the beach fringe and estuary fringe habitat would be modified by proposed roads.

The construction of new roads and reconstruction of existing roads could improve access to interior hunting sites. Residents from nearby communities, especially Tenakee Springs and Juneau, are expected to use the roads for hunting either on foot or with motorized vehicles transported to the site. (See subsections on furbearers and brown bears for discussion of access restrictions. See the Transportation section for more information on proposed roads.)

Road Management Objectives (RMOs) developed for Project Area roads take subsistence uses into consideration (see Appendix D). These access prescriptions can be changed if the need arises to manage wildlife resources differently for subsistence users.

Cumulative Effects

The cumulative effects evaluation of subsistence resources determines whether or not past, present, and reasonably foreseeable future activities may restrict subsistence uses. It also identifies the rural communities that use the Project Area that would be most affected by a restriction. Table 4-24 displays a summary of restrictions to subsistence uses that may be due to project effects and cumulative effects.

Abundance and Distribution

Timber management activities such as harvesting timber and building roads affect wildlife capability (see Table 4-23). This, in turn, could affect the abundance and distribution of subsistence resources. The abundance of brown bears, furbearers, fish and other subsistence resources appear to be sufficient to meet subsistence needs from the Project Area now and in the future. Average subsistence deer harvest in the Northeast Chichagof landscape area exceeds 10 percent of the 1956 and existing habitat capability, indicating that demand for deer exceeds the supply. (The Northeast Chichagof landscape area includes WAAs 3523, 3524, 3525, 3526, 3551, and 3630.1.) Future reductions in habitat capability may intensify conflict between subsistence harvest and sport harvest of deer in the Project Area, resulting in restrictions to sport hunters first and, if necessary, subsistence hunters. To be successful, hunters may need to make changes from their past hunting techniques, numbers of hunts, or times of hunts. They may have to travel to locations further from traditional hunting locales.

Other long-term effects of timber harvest that change habitat conditions for wildlife occur 25 to 30 years after harvest. At that time, the stand canopy begins to close and the understory begins to produce less forage (see Figure 3-3). Understory forage species are virtually eliminated for 100 years or more before they are re-established. Forage availability would decrease to near zero by year 50 following clearcut harvest (Schenck, 1996). Forage production in the new clearcut may be unavailable in winter due to a decrease in snow interception by the overstory and increased snow accumulations. The deeper snow stresses deer by increasing their energy needs during a time when they have high nutritional needs and foraging is difficult. The deer habitat capability models used in the analysis of alternatives account for this reduction in habitat suitability (see Figures 4-2 through 4-7). In addition, Appendix F includes two tables that display Project Area acres of stem exclusion and percentage of second growth habitat in stem exclusion 25 to 140 years after harvest. Implementing the 200-year rotation standard and guideline will reduce these impacts over the long term (+150 years).

Competition

Cumulatively, there are no known changes in competition from non-subsistence users in the foreseeable future in the Project Area or the Northeast Chichagof Island landscape area.

Access

Considering the cumulative effects of timber harvest and the effects of road access, there is currently a restriction on subsistence users on methods of access for trapping of marten, mink, and weasels on Federal lands, and a restriction on the use of motor vehicles for hunting of brown bears. Current Federal Subsistence regulations prohibit the use of motorized vehicles for hunting brown bears or trapping furbearers on Northeast Chichagof Island. These restrictions apply to subsistence and other users and are likely to continue into the future. With the current regulations in place, increased road construction from any of the action alternatives would not result in additional vehicle access for brown bear hunting or marten trapping by subsistence or other users.

Table 4-24

Summary: Significant Possibility of a Significant Restriction of Subsistence Use

Effects	Alt. A		Alt. B		Alt. C		Alt. D		Alt. E		Alt. F	
Abundance or Distribution:	Project (Cum.)		Project (Cum.)		Project (Cum.)		Project (Cum.)		Project (Cum.)		Project (Cum.)	
Deer	No	(Yes)	No	(Yes)	No	(Yes)	No	(Yes)	No	(Yes)	No	(Yes)
Brown Bear	No	(No)	No	(No)	No	(No)	No	(No)	No	(No)	No	(No)
Furbearers	No	(No)	No	(No)	No	(No)	No	(No)	No	(No)	No	(No)
Fish Resources	No	(No)	No	(No)	No	(No)	No	(No)	No	(No)	No	(No)
Other Resources	No	(No)	No	(No)	No	(No)	No	(No)	No	(No)	No	(No)
Competition:												
Deer	No	(No)	No	(No)	No	(No)	No	(No)	No	(No)	No	(No)
Brown Bear	No	(No)	No	(No)	No	(No)	No	(No)	No	(No)	No	(No)
Furbearers	No	(No)	No	(No)	No	(No)	No	(No)	No	(No)	No	(No)
Fish Resources	No	(No)	No	(No)	No	(No)	No	(No)	No	(No)	No	(No)
Other Resources	No	(No)	No	(No)	No	(No)	No	(No)	No	(No)	No	(No)
Access:												
Deer	No	(No)	No	(No)	No	(No)	No	(No)	No	(No)	No	(No)
Brown Bear	No	(Yes)	No	(Yes)	No	(Yes)	No	(Yes)	No	(Yes)	No	(Yes)
Furbearers	No	(Yes)	No	(Yes)	No	(Yes)	No	(Yes)	No	(Yes)	No	(Yes)
Fish Resources	No	(No)	No	(No)	No	(No)	No	(No)	No	(No)	No	(No)
Other Resources	No	(No)	No	(No)	No	(No)	No	(No)	No	(No)	No	(No)

Source: Schenck 1996

Note: "No" indicates an insignificant possibility of a significant effect. "Yes" indicates a significant possibility of a significant effect.

Resource Findings

The above analysis leads to the conclusion that the Project effects do not present a significant possibility of a significant restriction on subsistence use of deer, brown bear, furbearers, marine mammals, waterfowl, salmon, other finfish, shellfish, and other foods in the Northeast Chichagof Landscape. (See Table 4-24.) This finding is based on the potential resource effects by the three evaluation categories: abundance and distribution, competition, and access. However, when the Project effects are considered along with past, present and reasonably foreseeable future projects, there is a significant possibility of a significant restriction in the subsistence uses of deer, furbearers, and brown bear. A restriction on subsistence use of motor vehicles for hunting brown bears and trapping furbearers is currently in place.

The direct effects of this project on the subsistence use of deer, considered in the context of total habitat capability in the WAAs, appear insignificant. However, based on cumulative effects of further reducing habitat capability in the WAAs where demand exceeds supply and on the possibility that indirect competition may worsen the supply and demand situation in some other WAAs, there is a significant possibility of a significant restriction for Hoonah and Tenakee Springs residents, regardless of which alternative is implemented.

It seems clear that restrictions on subsistence use of deer would result from recurrent severe winter weather. The likelihood of a subsistence use restriction is about a one in eleven chance. This is based on an analysis of historical weather records that indicated an eleven-year weather cycle (Juday, 1984; Merriam, 1970), in which deer populations dropped due to severe winter weather (Johnson, 1986). Therefore, statistically, there is a 100 percent chance that one in eleven years there will be a severe winter in which the deer populations will decline. This generally occurs when the snow depth and cold drive the deer to the beaches in search of food. When the deer populations decline due to weather, season lengths and bag limits are reduced, total deer hunting effort is likely to drop, and total harvest is likely to be reduced. There will be a significant possibility of a significant restriction under these circumstances.

Likely reductions in subsistence uses due to the cumulative effects of this and other projects include: reductions in season lengths, reduced bag limits, increased travel distances to hunting areas, and increased effort required to bag less abundant game

If subsistence resource populations such as deer, bear or marten are reduced to the point where a lack of harvest curtailment would result in a health-of-the-population concern, subsistence user restrictions would be implemented. Reductions would be based on the best available data, and follow accepted conservation practices. The restrictions would likely be relatively short term (two to three hunting or trapping seasons).

Typical adjustments in season and bag limits for deer in Game Management Unit 4 have been as high as a 50 percent bag limit reduction (from three to six deer) and up to a 33 percent reduction in season length (four to six months), depending on the severity of winter weather. Restrictions to non-subsistence users have also occurred at these times. Restrictions have lasted from two to five years, depending on the amount of winter deer mortality, the severity of subsequent winters, and other factors affecting the recovery of the deer population.

Determinations

Section 810 (a) (3) of ANILCA requires that when a significant restriction may occur, determinations must be made in regard to whether:

- such a significant restriction of subsistence uses is necessary, consistent with sound management principles for the utilization of public lands;
- the proposed activity would involve the minimum amount of public lands necessary to accomplish the purposes of such use and occupancy, or other disposition; and
- reasonable steps would be taken to minimize adverse impacts upon subsistence uses and resources resulting from such actions.

Necessary, Consistent with Sound Management of Public Lands

The alternatives have been examined to determine if they are necessary, consistent with sound management of public lands. This examination has considered the following: the National Forest Management Act of 1976, ANILCA, Alaska Regional Guide, modified 1997 Forest Plan, Alaska State Forest Practices Act, and the Alaska Coastal Zone Management Program.

ANILCA emphasized the maintenance of subsistence resources and lifestyles. However, it also required the Forest Service to make available for harvest 4.5 billion board feet of timber per decade from the Tongass National Forest. The Tongass Timber Reform Act (TTRA) removed the 4.5 billion board feet of timber requirement from ANILCA but directed the Forest Service to seek to meet market demand and the market demand for the planning cycle. Demand for timber from the Tongass National Forest is expected to range from 99 to 188 million board feet per year over the next decade (Morse 1998).

The action alternatives presented here encompass five different approaches that would produce the resources that would best meet the needs of the public and help achieve multiple use management objectives in the modified 1997 Forest Plan. All of the alternatives involve some potential to impact subsistence uses. There is no alternative that would meet modified 1997 Forest Plan objectives and yet avoid a significant possibility of subsistence restrictions somewhere in the Forest. Therefore, based on the analysis of the information presented in this document on the proposed alternatives, these actions are necessary and consistent with the sound management of public lands.

4 Environmental Consequences

Amount of Public Land Necessary to Accomplish the Purpose of the Proposed Action

Much of the Tongass National Forest is used by one or more rural communities for subsistence purposes for deer hunting. The areas of most subsistence use are the areas adjacent to existing road systems, the beaches, and the areas in close proximity to communities. The extent and location of the subsistence use area within the Project Area make complete avoidance impossible. Areas other than subsistence use areas that could be harvested may be limited by other resource concerns such as soil and water protection, high-value wildlife habitat, economics, or scenic quality.

Effort was taken to protect the highest value subsistence areas. For example, beach fringe is one of the highest use subsistence areas. Less than one percent of the beach fringe habitat would be changed by proposed roads. A viable timber harvest project always includes alteration of old-growth habitat. This, in turn, always reduces projected habitat capability for old-growth-dependent subsistence species. It is not possible to reduce harvest in one area and concentrate it in another without impacting one or more rural communities' important subsistence use areas. In addition, harvestable populations of game species could not be maintained in a natural distribution across the forest if harvest were concentrated in specific areas. A well-distributed population of species is also required by the Forest Service regulations implementing the National Forest Management Act (NMFA).

Reasonable Steps to Minimize Adverse Impacts upon Subsistence Uses and Resources

Reasonable steps to minimize impacts on subsistence have been incorporated in development of the alternatives and project design criteria. The Federal Subsistence Board may use its authority to prioritize the harvest of resources among rural residents when necessary to protect the resource. This type of action, as prescribed by ANILCA, Section 804, may be necessary to ensure the availability and adequate abundance of deer and marten needed by the rural communities using the Project Area.

The Record of Decision (ROD) for the Indian River Timber Sale(s) Final EIS will include a final determination about the possibility of significant restrictions on subsistence resource uses that may result from implementing the selected alternative.

Hearings

Based on the findings of this analysis and under the provisions of the Alaska National Interest Lands Conservation Act, a subsistence hearing was held January 13, 1998 from 7:00 to 9:00 p.m. in the Tenakee Springs' Community Hall. Letters were sent to the Federal Subsistence Board, Alaska Department of Fish and Game, Regional Fish and Game Advisory Councils, local Fish and Game Advisory Committees, and the City of Tenakee Springs, advising them of the hearing. Announcements were published in the Juneau Empire and Daily Sitka Sentinel, and posted in public areas. Twenty people attended the hearing; written and verbal testimony was received from ten people. Testimony received, both verbal and written, has been incorporated in the EIS (see Appendix N).

Recreation

Direct, Indirect and Cumulative Effects

This section analyzes the effects of the proposed timber sale(s) on the recreation attractors and activities on both non-National Forest and National Forest System lands. The effects of the alternatives on the recreation resource are considered from two aspects or phases: (1) during the sale itself, and (2) after the harvesting has been completed. Overall, Alternative D would have the least impacts on the recreation resources and commercial uses in the Project Area; Alternative F would have the greatest impacts.

Recreation Resources

Recreation Opportunity Spectrum (ROS)

Recreation experiences on National Forest System lands change as management prescriptions are implemented. The comparison of alternatives in Table 4-25 shows how the timber sale(s) would affect the Recreation Opportunity Spectrum (ROS) experience in the Project Area. In all cases, the area would change from a more wild experience to a more developed one. Alternative D would have the least impact on the existing recreation experience, with a 26 percent acreage change in Semi-Primitive Non-Motorized (SPNM) and 1 percent change in Semi-Primitive Motorized (SPM). The Roaded-Modified (RM) recreation opportunity experience would increase from 20 percent to 48 percent. Alternative F would have the most effect on the existing recreation experience. (See Recreation maps in Appendix G.)

Table 4-25
**Recreational Opportunity Spectrum Alternative Comparison
by Acres and Percentages of National Forest Land in the Project Area**

	Alt. A (Existing)	Alt. B	Alt. C	Alt. D	Alt. E	Alt. F
SPNM (Semi-primitive non-motorized)	28,319 79%	17,611 49%	17,862 50%	18,790 53%	18,219 51%	16,540 46%
SPM (Semi-primitive motorized)	392 1%	143 0%	357 1%	143 0%	357 1%	250 1%
RM (Roaded modified)	7,012 20%	17,969 51%	17,504 49%	16,790 47%	17,147 48%	18,933 53%
Total	35,723 100%	35,723 100%	35,723 100%	35,723 100%	35,723 100%	35,723 100%

Source: Nelson 1996

The long-term effects on ROS experience would also differ by alternative. For example, Alternative B would recover its wildland appearance sooner, even though the impacts of this alternative cover more of the Project Area than the other action alternatives. This is a result of the higher percentage of partial harvest units in Alternative B, which means less impact to the recreation experience in the long term.

Shoreline Recreation Opportunities

Most of the existing recreation experience on the saltwater shoreline on National Forest land is Roaded Modified (seven miles), with a small amount of Semi-primitive Motorized (two miles). The Roaded Modified areas would be extended in Alternatives B and D, with the development of an LTF site at 10-Mile Creek. In all other alternatives, the shoreline recreation opportunities would remain the same.

4 Environmental Consequences

The non-National Forest System shoreline would only be altered in Sunshine Cove. A LTF would be built on the former Sunshine Cove LTF site in Alternatives B, C, and E. In Alternative F, a new LTF site (Sunny Too) would be developed in Sunshine Cove. (See the Transportation System section in this chapter.)

Alternative D would have the least impact on recreational use of the Sunshine Cove shoreline because the cove would only be used for mobilization (unloading heavy equipment from barges at high tide onto the State right-of-way easement to access the Indian River road). In this alternative, harvested timber volume would be transferred from the area via the LTF at 10-Mile Creek.

Of the alternatives that use a LTF in Sunshine Cove, Alternative B has the smallest harvest volume and would also use the 10-Mile Creek LTF. This would limit the disruption of recreational use of Sunshine Cove. Alternative F would have the highest impact to the non-National Forest shoreline, since it harvests the largest amount of timber volume and uses the new Sunny Too LTF. This LTF would have a much larger visual impact than the former LTF, extending 200 feet into the cove and at least ten feet higher than mean-high tide.

Sense of Isolation (Visual Quality and Noise)

One aspect of the Alaskan experience enjoyed by local residents, recreationists, and tourists is a sense of isolation caused by the absence of sights and sounds related to human use (for example, the sight of harvested landscapes). In this project, the recreation vegetation visual attractors that would be altered by human use to the highest degree are the Sitka spruce, western hemlock and Alaska yellow-cedar stands. Alternative D would have the least impact (4 percent). Alternative F would have the greatest impact (6 percent) in the Project Area. In all action alternatives, a wildlands experience is not achievable in the immediate area of LTFs, but the effect would only last for five to seven years. Alternatives C, D, E, and F would have the least impact, since these alternatives propose using only one LTF. Alternative B proposes to use two, which doubles the area affected.

Noise would result from activities at the LTF sites and from helicopter operations, but would only occur during the periods that the timber sales are active. Harvest activities would span three to five years, with the normal operating season from March to November each year.

The noise and activity at the LTF sites in Sunshine Cove may cause a decrease in the tourist economy in Tenakee Springs. Activities would be visible not only from a distance (1/2 mile offshore), but also close-up from the East Tenakee Trail. To the extent that tourists avoid Tenakee Springs because of this activity, the tourist economy would decline. The effect would be for the life of the sale(s) and rehabilitation of the LTF (approximately five to seven years). Alternative D would have the least impact because it does not propose a LTF in Sunshine Cove. However, off-loading road building equipment at the site under this alternative would still have a short-term impact on the opportunity for a wildland experience. Of the alternatives utilizing the Sunshine Cove LTF site, Alternative B would have the least impact due to the small amount of harvest volume removed through the site. Alternative F would have the most impact because it proposes the most volume to be transferred at Sunshine Cove.

In all action alternatives, the direct effect of noise on Tenakee Springs would probably be minimal. A ridge system lies between the town and the main part of the Project Area where timber harvest activities would occur. Harvest activities in Alternative D are at least eight miles from Tenakee Springs. Under the other alternatives, harvest activities are at least three to six miles away.

Helicopters would be used during the project for harvesting timber and for transporting personnel. They would likely be stored and maintained at Corner Bay. Two daily low-altitude flights across Tenakee Inlet for each helicopter would be required. The Tidelands Memorandum of Understanding (MOU) between the Forest Service and the City of Tenakee Springs stipulates that helicopters would only be allowed a certain flight path in the timber sale area except in case of emergency (see Mitigation Measures in Appendix C). This provision would not control the amount of noise made by the helicopters, but would confine the noise to certain areas. The provision is directly linked to Tenakee Springs' concern about noise pollution throughout the immediate area surrounding the Project Area.

The same type of effects at Sunshine Cove would happen at the 10-Mile Creek LTF site in Alternatives B and D. Though some hiking is done at 10-Mile Creek, the area is viewed from the saltwater by people traveling with outfitters and guides, independent boaters, and small cruise ships. Alternative B would have less effect than Alternative D, because less timber volume is transferred at 10-Mile Creek. Alternatives C, E, or F do not use this LTF site.

Saltwater and Freshwater Fishing

No reduction of saltwater fishing is expected due to habitat loss. However, LTFs in Sunshine Cove and 10-Mile Creek would cause a temporary displacement of saltwater recreation fishers (halibut, rockfish, salmon, snapper, crab, and shrimp). Displacement would be caused by log rafting and transporting activities, which would last three to five years.

At Sunshine Cove, Alternative B would have the least impact because it has a lower timber volume than the other alternatives. However, it would have the most detrimental effects on saltwater fishing overall, because it proposes the use of both 10-Mile Creek and Sunshine Cove LTFs, which would cause more displacement. Alternative F would have the highest impact, since it harvests the most timber volume and would operate the LTF longer.

At 10-Mile Creek, Alternative B has the lowest impact to the saltwater area surrounding the LTF because it has the least amount of timber volume being transferred at the site. Alternative D would have the most impact because it has a higher amount of volume than B and would be used for a longer period of time.

Indian River has the highest amount of freshwater fishing within the Project Area. Most of the fishing occurs below the waterfall system. No alternative would affect this specific area. With the Riparian Management Area prescriptions in the modified 1997 Forest Plan, it is not anticipated that there would be any degradation to the aquatic resource. (For further details, see the Soils, Fish and Water sections in this chapter.)

Deer Hunting

No reduction in sport deer bag limits or seasons is expected as a result of Indian River Project timber management activities. The possibility of a reduction exists if the area experiences severe winter conditions with or without this project. (For further details, see the Wildlife and Subsistence sections.)

Tenakee Springs residents annually harvest approximately 69 deer, and expressed a concern about deer hunting competition from logging camp employees. Since the camps would be located away from the Project Area (at Corner Bay in Alternatives B, C, E, and F, and at Seal Bay in Alternative D), this would alleviate the residents' concerns in the immediate area of the community.

4 Environmental Consequences

Deer hunting competition in Corner Bay (WAA 3627) and Seal Bay (WAA 3629) was also considered, since Tenakee Springs hunters take 29% of their total annual deer harvest from these two WAAs. WAA 3627 includes Corner Bay, Trap Bay, and the shoreline north of Little Basket Bay. Average annual harvest in this WAA is 82 deer. On average, Tenakee Springs residents take five of these deer. WAA 3629 includes Long Bay, Seal Bay, Saltery Bay, and Crab Bay. Average annual harvest in this WAA is 205 deer. On average, Tenakee Springs residents take 15 of these deer. This represents 22 percent of the residents' annual deer harvest.

The people in Tenakee Springs would probably feel the highest impact of competition for deer hunting in this area in Alternative D, in which the logging camp would likely be located at Seal Bay. Alternative B would have the least impact on the competition for hunting (proposed logging camp at Corner Bay) because it has the smallest amount of volume to be harvested, so the camp would close sooner than in Alternatives C, E, and F.

The largest impact by logging camp employees' hunting competition would be felt by the Juneau hunters who harvest an average of 67 percent (55 deer) and 59 percent (121 deer) of the deer from WAA 3627 and WAA 3629, respectively. This competition could cause a decline in the number of Juneau hunters who stay in Tenakee Springs while hunting. This, in turn, could cause a decline in Tenakee Springs recreation/tourism income from the Juneau hunters. The alternative comparison would be the same as the paragraph above.

November is the highest use month for Juneau hunters in the Tenakee area. Some of these hunters utilize the Indian River road system. In Alternatives B, C, E, and F, harvesting and log haul on the Indian River road would continue until the end of November, and the road may not be available for personal use. Tourist income generated from the hunters' use of the area would possibly decrease in these alternatives. Alternative D would have the least impact on hunters because there will be very little harvesting in the Indian River drainage and the 10-Mile LTF will be used to transport the timber. Alternative F would have the largest impact because of the high volume harvest and the added time to transport it on the Indian River road.

East Tenakee Trail

Regardless of the LTF site used in Sunshine Cove, hikers walking the East Tenakee Trail would expect to hear the noise of an active timber harvest (Alternatives B, C, E, and F). The noise would originate from either LTF generators in Sunshine Cove, or truck traffic.

Alternative B would have the least impact because it has the smallest amount of timber volume to be transported to the Sunshine Cove LTF. Alternative F would have the greatest impact because it has the highest volume to be removed through this LTF.

However, other recreation opportunities exist in the area, such as the West Tenakee Trail, that could be substituted for the use of the East Tenakee Trail. The Indian River bear-viewing opportunity could not easily be duplicated. This use would probably continue but at a lower level. The bear-viewing area is 0.25 to 0.5 mile from the LTF sites, and the noise increase would be considered moderate compared to the existing situation. Forest Service wildlife biologists feel that the bears would adjust to the noise and continue to feed at the river's waterfalls area.

To keep the trail usable during harvest, an access ramp from the existing trail on to the Indian River road prism would be needed, plus a four-foot-wide walkway for 80 feet on the road prism and an exit ramp back onto the trail. The section of trail on the road prism would be constructed through the existing alder growth. A screen of alder would be left between the road and the trail. Gravel would be used to cover the alder stubs on the trail

and provide safe footing. Forest Service personnel would complete a survey and construction plan for inclusion in the timber sale contract.

In all action alternatives, safety measures for people crossing the road would be provided by construction of ramps for entering and exiting the road prism. Trail construction and access would be part of the timber sale contract and would follow Forest Service trail standards and specifications.

In all action alternatives, trail use could be disrupted during reconstruction. Alternative D would have the least impact on the trail users. Under this alternative, this portion of road would no longer be used in the sales(s) once the heavy equipment has passed through the area. Alternative F would have the largest impact because the trail would be moved and modified to accommodate construction of the Sunny Too LTF.

In all action alternatives, the contractor would be required to maintain clear access to the East Tenakee Trail during sale operations. After harvesting is completed, any damage to the trail would be corrected to Forest Service trail standards by the contractor. These provisions would be included as a clause in the timber sale contract(s) (Nelson 1996).

Indian River Road System

The Indian River drainage is the highest use area for the residents of Tenakee Springs. The recreation opportunities enjoyed on the Indian River road system (including the 10-Mile and Freshwater drainages) could be affected by the noise of vehicle traffic and harvesting. The noise would be prominent throughout the valleys for three to five years. Alternative D would have the least amount of harvesting and road building in this drainage, and so would have the smallest noise impact. Alternative F would have the greatest noise impact on this area since it has the largest amount of harvesting in the drainage; it has the largest amount of timber volume in the total Project Area; and all of this volume would be transported through the Indian River drainage to the Sunny Too LTF.

Recreationists' access to opportunities that utilize the LTF areas and Indian River road may be limited by the contractor's concern for operational safety. Alternative D would have the least impact on limited use of the area, since the contractor would only use Sunshine Cove for off-loading equipment. All other action alternatives propose a LTF at Sunshine Cove.

During this entry, Alternative F would have the most acreage visually disturbed in the drainage by timber harvesting and road building. Alternative D would visually disturb the immediate Indian River drainage the least.

Karst Recreation

The Geology section states that no degradation to the karst resource would occur during or after the harvesting and road building for the proposed timber sale. However, the resource accessed by the Indian River road system will probably be curtailed by the logging operator because of safety concerns for three to five years. After the harvesting has been completed, the karst resource would again be available for recreation use.

Tenakee Springs Use Areas

Effects within Tenakee Springs' home range would occur in all action alternatives during the sale. This is due, in part, to the fact that all or most of the Indian River road system may not be available for recreation use. (See Indian River road system discussion above.) This would also be true of the LTF sites at 10-Mile Creek and Sunshine Cove. Table 3-32 displays recreation uses by Tenakee Springs residents and tourists in the Project Area. All of these activities would be disrupted to some extent during harvesting.

Alternative D would have the least impact on Tenakee Springs' home range because Sunshine Cove and the main Indian River road would not be used for harvesting, making them available for recreation use. Alternative F would have the most impact because it harvests the highest timber volume, and would use the Sunny Too LTF. After harvesting, the recreation users' experience of the existing activities would be at a higher level of development because of the altered landscape.

Recreation Places, Activities, and Site Alternative Comparison

Recreation Places

The degree of change to existing Recreation Places depends upon how the new road system would be managed or how harvesting has affected it. Table 4-26 shows the effects on existing Recreation Places by displaying changes in the recreation experience (ROS), and changes in the acreage of each Recreation Place affected by Road Management Objectives (RMO) for each alternative (see Appendix D).

In Alternatives D, E and F, the Indian River Road System Recreation Place would be reduced by 81 percent, due to proposed RMOs that would not maintain the road for vehicular traffic.

The Sunshine Cove LTFs are in the Indian River Recreation Place. In Alternatives B, C, E, and F, there are no harvest units near the LTFs, and so recovery time for the recreation experience is expected to be comparatively short. After the sale and rehabilitation of the LTFs, the recreation opportunity would remain Roaded Modified (RM) until the area has the qualities to provide a Roaded Natural (RN) experience (approximately five years). After ten years, it would be Semi-primitive Motorized (SPM).

The Indian River Road is also in the Indian River Recreation Place. After the harvesting is completed, the recreation opportunities would remain Roaded Modified. Under Alternative D, the Indian River drainage road system would revert to a Roaded Natural or Semi-primitive Motorized area sooner than the rest of the Project Area, because there would be no harvesting in the drainage. This would enhance the Indian River Recreation Place even more for those wishing to have a wildlands experience.

The 10-Mile Recreation Place experience would be changed from Semi-primitive Motorized to Roaded Modified in Alternatives B and D. For recreationists who enjoy the existing condition, this would be a negative impact. However, the proposed RMO for Alternative B would also add the 10-Mile Creek LTF development into the large, maintained Indian River Road System Recreation Place.

Table 4-26
**Recreational Places: Changes to the ROS Settings and Acres
Due to Proposed Road Management Objectives, by Alternative**

Recreation Place	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E	Alt. F
Indian River Road System (#31,120.01)						
ROS Setting	Roaded Modified	Roaded Modified	Roaded Modified	Roaded Modified	Roaded Modified	Roaded Modified
Acres	3,417	4,510	4,514	662 ²	662 ²	662 ²
10 Mile Estuary (#31,156.01)						
ROS Setting	Semi- primitive Motorized	Roaded Modified	Semi- primitive Motorized	Roaded Modified	Semi- primitive Motorized	Semi- primitive Motorized
Acres	128	0 ¹	128	214 ³	128	128

Source: Nelson 1996

(1) 10-Mile Recreation Place would become part of the Indian River Road System Recreation Place due to roading and the development of the 10-Mile Creek LTF. The ROS recreation experience would change from Semi-primitive Motorized to Roaded Modified. The proposed RMO would keep all the main line roads open for recreation vehicular use, thereby increasing the size of the existing Recreation Place.

(2) The Indian River Road System proposed RMO for this alternative would close this road system to recreation vehicular traffic. This action would cause the Indian River Recreation Place to shrink in size to an area that would be accessible to hike to and from Tenakee Springs in one day.

(3) The 10-Mile Recreation Place recreation experience would change from Semi-primitive Motorized to Roaded Modified in this alternative. The proposed RMO for this area would close the road to vehicular use. The Recreation Place would increase in size slightly because people use the developed LTF sites to access the area.

4 Environmental Consequences

Recreation Activities

The Recreation Activities would not change in any alternative, but the wildness of the experience would be changed from Semi-primitive Motorized to Roaded Modified in Alternatives B and D in the 10-Mile Estuary Recreation Place.

Recreation Sites

The existing Recreation Sites (Sunshine Cove anchorage, the beaver ponds area, dispersed camp sites in the 10-Mile drainage, a cave, and a trail leading to alpine on the Freshwater/10-Mile Pass) would not be disturbed in any alternative. However, depending upon the proposed RMO, access to some sites could be impeded. In Alternatives D, E and F, the proposed RMO would not maintain the road system for recreation vehicles. The sites affected would be the cave and the trail.

Roadless Areas

All of the action alternatives would reduce the size of the two inventoried Roadless Areas (#321 Tenakee Ridge, and #323 Game Creek) in the Project Area, but they would still meet the 5,000-acre size criteria qualifying them for possible consideration for a Wilderness designation. In Alternatives B, D, and F, not only is the Game Creek Roadless Area reduced in size, it would be split by the harvesting and roading at the 10-Mile drainage. The resulting two new unroaded areas would still be over 5,000 acres in size, allowing for each piece to be considered for Wilderness designation in future land management plans.

Commercial Recreation Uses

Tenakee Springs

The disturbance of the wildlands visual resource and expected noise level in Sunshine Cove may affect the number of Tenakee Springs' recreation clients during timber harvesting. Many of these tourists are from Juneau, traveling to the area for a weekend. Alternative D would have the least visual impact, since only one unit would be harvested in the Indian River drainage. Alternative B would spread the harvest throughout the drainage but use many different types of silvicultural prescriptions, and Alternative C would result in clearcut units in the upper portions of the Indian River drainage. Alternative F would have the highest visual impact because it has the highest clearcut volume. The noise disturbance associated with timber harvest activity is expected to last three to five years, and these people may not return to the area for this whole period. They may also influence new people by not recommending Tenakee Springs as a place to visit because of the noise and visual disturbance.

Though noise would be increased throughout the area, certain specific sites would have a greater noise increase than others. These sites would be the LTFs, the Indian River road system, log landings, and helicopter fuel sites.

The possibility of a decrease in the tourist trade (and resultant decrease in revenues to the community and outfitters) caused by the change to the visual resource around the proposed 10-Mile Creek LTF area is doubtful. The disturbance would be small (operating machinery in a fairly small area), and would occur at a distance (1/2 mile offshore from the LTFs). Of the alternatives that would visually affect the 10-Mile Creek saltwater area, Alternative C would have the least impact and Alternative D would have the greatest.

During the harvesting, a decrease of tourist dollars could also be caused by competition for the Indian River road system between recreation users and logging operators. This scenario is especially likely in the immediate Indian River drainage, which receives the highest recreation use of the whole road system. Alternative D would have the least impact because the contractor would only have a need for the road system for a short period of time. Alternative F would have the most impact because the contractor would use the road for the longest period of time.

Outfitters and Guides

Logging activity at the Sunshine Cove and 10-Mile Creek LTF sites could displace private fishing guides from the saltwater associated with these sites for three to five years. See the Saltwater and Freshwater Fishing section above for further discussion and conclusions.

In all action alternatives, the noise of timber sale activities could decrease the ability of Tenakee Springs businesses and independent guides to provide a wildlands experience for tourists within the Project Area. This decrease would occur between March and November and would last for three to five years. See the Sense of Isolation (Visual Quality and Noise) section above for a comparison of alternatives.

Though there were 13 outfitters and guides permitted to use the National Forest System lands in the Project Area in 1995, none did. They did use Tenakee Inlet, which views the Project Area from the saltwater and across the inlet. The LTFs would be visible in all action alternatives.

Other Commercial Uses

It is doubtful there would be a change in use by any of the other groups using Tenakee Inlet.

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Recreation and Tourism Income

Recreation and tourism income in the community of Tenakee Springs would likely be unchanged under Alternative D. This alternative only harvests one unit in the Indian River drainage, eight miles from the former Sunshine Cove LTF. Timber harvested in this alternative would be transported to the 10-Mile Creek LTF.

A possible decline in recreation/tourism income in Tenakee Springs is likely in all other action alternatives. The decline would be caused by the visual and noise disturbances in the Sunshine Cove Area and the possible lack of access to the Indian River Road during hunting season. The greatest impacts could be to the independent traveler visiting Tenakee Springs. Table 4-27 shows a summary of recreation/tourism income declines. A decrease of 18% of users would only impact the recreation/tourism dollars by 2 percent, because independent travelers spend less money than outfitter and guide guests.

Table 4-27
Commercial Recreation/Tourism Use and Income Summary For Alternatives B, C, E and F*
During and After the Indian River Timber Sale(s)

	Tenakee Springs: Existing	Tenakee Springs: During Harvest	Tenakee Inlet: Existing	Total Existing	Total During and After Harvest
Average Number of People Willing to Pay for Recreation/Tourism Experience	1,226/yr.	1,006/yr. 18% Decrease	752/yr.	1,978/yr.	1,758/yr. 11% Decrease
Average Days of Use by Groups Generating Recreation/Tourism Income	1,248/yr.	1,028/yr. 18% Decrease	74/yr.	1,322/yr.	1,102/yr. 17% Decrease
Average Total Recreation/Tourism Income Generated	\$562,300/yr.	\$549,432/yr. 2% Decrease	\$176,950/yr.	\$739,250/yr.	\$726,382/yr. 2% Decrease

Source: Nelson 1997

* Commercial recreation/tourism use and income for Alternatives A & D would be the same as the existing situation.

After the sale has been completed, noise disturbance would not exist and access to the Indian River Road would no longer be encumbered. The recreation/tourism income would remain at the pre-sale level in Alternative D, because there would have been very little disturbance in the Indian River drainage. It is also likely that recreation/tourism income would return to the pre-sale level in Alternative C, because the land disturbance caused by harvesting is located six miles from the former Sunshine Cove LTF, and the higher recreation use areas are between the LTF and the timber harvest area. Alternative B harvests units throughout the entire area, but impacts are reduced by emphasizing partial harvest methods. This also means that the area would recover faster for a more wildland recreation experience, causing the recreation/tourism income to return to pre-sale levels more rapidly than in Alternatives E and F.

Potential Recreation Opportunities

The potential recreation opportunities listed in Chapter 2 (Enhancement Opportunities) could be accomplished even if the no-action alternative is implemented.

Scenic Quality

Direct, Indirect, and Cumulative Effects

Field observations, topographic map analysis, and computer-generated perspective simulations were used to determine the impacts of the action alternatives on the visual quality of the Indian River Project Area. All action alternatives would result in visual impacts of varying degrees.

Some timber activities create unnatural lines and textures in the landscape, which contrasts with the rough, even-textured characteristic of Southeast Alaska old-growth rain forest. This contrast may be evident to the average national forest visitor. However, timber harvest and road building activities in the Indian River Project are located primarily in the interior of Chichagof Island, shielded from viewing from Tenakee Inlet by the intervening mountains.

Alternative A

Alternative A, the no-action alternative, would produce no additional visual changes in the Project Area.

VCU 2041 - Game Creek

All of the action alternatives would meet the adopted VQO of Maximum Modification.

VCU 2160 - Freshwater Creek

All of the action alternatives would meet the adopted VQO of Maximum Modification.

VCU 2200 - Tenakee Springs

All planned harvest units in the action alternatives meet the adopted VQO of Maximum Modification. Alternatives B, C, and E would use the former LTF site at Sunshine Cove. Removing alder from the site would expose the white rock at the site to view, creating a visual impact. Alternative F would use the new LTF site at Sunny Too. This new LTF and access road, which requires a large cut through light-colored rock, would have strong visual impacts on State land.

VCU 2210 - Whip Station

There are no planned harvest units in the VCU, so all alternatives meet the adopted VQOs.

Alternatives B and D would use the new LTF site at 10-Mile Creek. The LTF and its access road have potential to create a strong visual impact because of the heavy excavation that will likely be necessary. This development may not meet the adopted VQO of Partial Retention in the foreground required in a Modified Landscape LUD; however, the modified 1997 Forest Plan provides for exceptions to meeting the VQO in the case of some non-conforming developments, including log transfer facilities.

VCU 2221 - 10-Mile Creek

All of the action alternatives would meet the adopted VQOs of Retention and Maximum Modification. Most of the timber management activities occurring in this VCU are either

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not seen from Tenakee Inlet, or are mitigated by partial harvesting. Future visual conditions in Alternatives C, E, and F remain unchanged.

Visual Recovery Rates

The potential for visual impact is greatest right after timber is harvested; stumps and debris, fresh road cuts and fills, and exposed boles and limbs of adjacent stands dominate the visual setting. By the fifth year of regeneration, the new forest is filling out, and low-lying vegetation, alder, and young trees begin to cover the stumps and exposed ground. From year 5 to 20, the young trees have become established, reaching a height of approximately 15 feet. After 20 years, the forest visitor would see a stand of spruce and hemlock, with some Alaska-cedar in the foreground. In the middle-ground, the contrast between the new forest and mature forest would be very obvious.

At the end of 50 years, the new forest would reach a height of approximately 50 feet. The canopy would be closing and the new forest would appear very dense. Toward the end of 80 years, the stand would reach 75 percent of its mature height. The canopy would appear full with crowns touching, allowing little sunlight to reach the forest floor and little understory vegetation. At 100 years, little visual difference would be noticed between the 100-year forest and an adjacent mature forest. Timber would reach approximately 100 feet in height and appear healthy, lush, and with full canopy.

Cumulative Effects

While individual harvest units may meet the assigned VQOs, when viewed as a group along with previously harvested units they may disturb too much of the natural landscape during one period of time. This could create a significant cumulative effect. The Maximum Disturbance Threshold (MDT) is a way of determining the level of visual impacts over broader areas by evaluating the percentage of harvested area seen in larger viewsheds (see glossary). If the harvested area is over the prescribed threshold, the MDT is exceeded.

An evaluation of the MDT for Indian River area shows that no VCU will exceed the MDT under the VQO scenario established by the modified 1997 Forest Plan.

Heritage Resources

In Section 106 of the National Historic Preservation Act (NHPA), Federal agencies are directed to take into account the effect of a project such as the Indian River Timber Sale(s) on cultural resources. Cultural resources are defined as any prehistoric or historic district, site, building, structure, or object included in, or eligible for the inclusion in the National Register of Historic Places. According to Section 106, historic preservation concerns are to be identified, and any potential conflicts with the proposed project are to be resolved in the public interest.

The basic steps to be followed for the National Preservation Act, Section 106 are:

- early consultation for resource identification/concern;
- preparation of a Research/Survey Design for the Project Area;
- completion of a structured survey in accordance with the Project Area Research/Survey Design;
- identification of those resources considered eligible for the National Register of Historic Places (complete a Determination of Eligibility); and
- a formal Determination of Effect on identified resources, as outlined in 36 CFR 800.

The Section 106 review for the Indian River Project is completed. Heritage Resource surveys were conducted in the Project Area during the 1993, 1994, and 1995 field seasons. As a result of these surveys, seven archaeological sites were identified. (See Table 3-38 in Chapter 3.) Of these sites, three are located on National Forest System Land. One of the three (the East Tenakee Trail) has been determined eligible for inclusion in the National Register.

Direct and Indirect Effects

Direct effects on historic sites are best measured as alterations to the site settings; alterations of above-ground objects, features and structures; and disturbance of subsurface deposits. Indirect effects could include changes in stream channel, sedimentation patterns, or slope instability -- all brought about by project activity in the nearby vicinity of the site.

The distinction between direct and indirect effects can be subtle. Impacts can occur due to project-related activities, increased public access, or from natural processes. Impacts resulting from project activities could include partial damage or total destruction due to ground-disturbing actions, increased pedestrian or vehicular traffic over a site, or actual looting. Natural processes can be exacerbated by timber-related activities, which can lead to adverse effects to historical sites.

The degree of risk for impact on a site is best measured by distance from the proposed activity areas. The Northern Tongass has operated on a "100 meter" rule. Those activity areas that fall within 100 meters (approximately 330 feet) of a site are determined to have a direct effect on the site. Clearly, the farther away the project activity is from the site, the less likely that the site will be affected. This does not preclude the possibility of an indirect effect; however, these are much more difficult to predict. Factors listed above do not necessarily occur with predicted regularity, and are best determined by a systematic monitoring program.

Alternative F is the only alternative that would have a direct effect on any historic property. This alternative would have an adverse effect on the East Tenakee Trail -- an historic trail (49 SIT 468) which extends for eight or nine miles along the north shore of Tenakee Inlet (see Chapter 3, Heritage Resources). A determination of effect has been completed and SHPO has concurred with this determination.

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This trail was originally constructed for foot traffic between Tenakee Springs and the cannery that was located at Cannery Cove. The Civilian Conservation Corps (CCC) significantly enhanced it during the 1930s. As stated above, it has been determined eligible for listing to the National Register of Historic Places (Iwamoto 1996). The State Historic Preservation Officer (SHPO) has concurred with the determination of eligibility.

The East Tenakee Trail starts in Tenakee Springs, and extends five or six miles east of the town to Coffee Cove. In Alternative F, Forest Service Road #75002 would be built over approximately 60 meters (200 feet) of the current trail, to access the Sunny Too LTF site. Implementation of mitigation measures would be required prior to the construction of this portion of the road.

Mitigation measures would include consulting with the SHPO and the Advisory Council on Historic Preservation, and developing a Memorandum of Understanding (MOU). The MOU would outline what measures the Forest Service shall do to be in compliance with the National Historic Preservation Act. It would also ensure that:

- alternative measures have been taken into consideration before deciding that this is the best alternative to select; and
- adequate documentation has been completed and submitted for the site before project activity begins.

Mitigation for the adverse effect may include interpretation along the East Tenakee Trail. Consultation with the people of Tenakee Springs would be an integral part of the mitigation process.

Cumulative effects on heritage resources can be measured through natural erosion processes and/or by the amount of development on lands containing heritage resources.

While current and future project activity obviously do not impact an historic event, continued development of Federal projects within the area can certainly have a cumulative impact on the site where the event occurred. As in the case of the East Tenakee Trail, historic sites identified within the Project Area have been adversely affected by past timber harvest activities (in this instance, activities from the 1970s).

Since the early 1980s, the Tongass National Forest has consistently implemented the inventory, evaluations, and assessment of effects through the National Historic Preservation Act, Section 106 process. If the historic properties identified are avoided and/or protected using appropriate mitigation measures, there should be no additional cumulative effects to these sites.

Cumulative Effects

Land Status

Direct and Indirect Effects

Only effects on non-Federal lands are discussed in this section.

Federal Right-of-Way

The right-of-way along the Indian River Road (Road #7500) through State land would be utilized in Alternatives B, C, E, and F.

Log Transfer Facilities

Alternatives B, C, and E would reconstruct the existing log transfer facility (LTF) at Sunshine Cove. (See City of Tenakee Springs/Sunshine Cove Tidelands discussion below for impacts.) Alternatives B and D would construct a new LTF on State tidelands at the 10-Mile Creek site. Alternative F would construct a new LTF on State tidelands at the Sunny Too site. The Forest Service currently is not authorized to use any of these sites. All local, State and Federal permits and authorizations would need to be acquired prior to construction.

State Selection AA-15077

The new road construction accessing the Sunny Too LTF in Alternative F crosses less than one mile (0.15 mile) of State land. The Forest Service would need to acquire an easement from the State prior to construction.

East Tenakee Trail

Construction of the access road to the Sunny Too LTF site in Alternative F would require relocation of approximately 200 feet of the East Tenakee trail. The City of Tenakee Springs holds the easement for this trail. Relocating the trail would require approval by the State of Alaska, Department of Natural Resources. (See Heritage Resource section in this chapter for further discussion of the trail.)

City of Tenakee Springs/Sunshine Cove Tidelands

Alternatives B, C, and E would require authorization from the City of Tenakee Springs to use the Sunshine Cove log transfer facility (LTF).

Memorandum of Understanding: Tenakee Springs and the Forest Service. Regional Forester Phil Janik and Tenakee Springs mayor Louis Heins signed a Memorandum of Understanding (MOU) in November 1996. The MOU is included in full in Appendix L. The MOU addresses concerns of Tenakee Springs residents regarding use and occupation of City-owned tidelands in Sunshine Cove. Sunshine Cove is located approximately three miles southeast of the City of Tenakee Springs. Previous harvest of the Indian River, 10-Mile Creek, and Freshwater Creek drainages was accomplished utilizing an LTF site in the cove. This site was last used in 1986.

The MOU specifically addresses the use of the tidelands area at, and adjacent to, the former LTF site, and documents compensation to be paid to the City of Tenakee Springs for use or occupation of their tidelands. As long as the Forest Service or its Timber sale Purchasers and Assignees comply with the terms of the MOU, Tenakee Springs agrees to not terminate the MOU prior to December 31, 2003. See Appendices C and L for mitigation measures requested by the City of Tenakee Springs and addressed in the MOU. These measures would be incorporated into the timber sale contract as appropriate.

4 Environmental Consequences

Comparison of Alternatives

The action alternatives include the reconstruction of one LTF at the Sunshine Cove site, and construction of new LTFs at the Sunny Too and 10-Mile Creek sites. The Forest Service does not currently have authorization to use any of these sites.

Alternatives C, D, E, and F would require acquisition of one LTF authorization, while Alternative B would require acquisition of two. Alternative B would result in the greatest conflict in regard to land status, due to the number of LTFs (two) and Governments involved. Alternatives C, E, and F would result in slightly less conflict, since only one LTF would be involved. Alternative D would result in the least conflict, since non-Federal lands around Tenakee Springs are avoided in this alternative.

The access road to the Sunny Too LTF site would conflict with State Selection AA-15077. Surveyed boundary lines would reduce the possibility of unintentional encroachment on State land.

There are no known Native Allotment Applications, and thus no possibility of encroachment on these lands.

Transportation System

Direct, Indirect, and Cumulative Effects

The transportation systems for the action alternatives were developed to provide road access to harvest units that could be logged using either conventional (ground-based or cable systems) or non-conventional means such as helicopters. This section focuses on the access needs of each alternative, and the effects of the alternatives on the transportation system. The discussion is grouped into the following categories: roads, stream crossings and bridges, and log transfer facilities (LTFs). The section concludes with a summary comparison of alternatives.

Roads

Table 4-30 summarizes existing and proposed roads for each alternative. Estimated costs for these roads are shown in Table 4-28. Road Management Objectives (RMOs) are displayed by alternative in Appendix D.

Detailed discussions of roading effects on resources in the Project Area (for example, soil, fish, water, and recreation) are included in the specific resource sections in this chapter.

Table 4-28

Projected Road Costs by Alternative

	Alt. B	Alt. C	Alt. D	Alt. E	Alt. F
New Construction	\$1,634,420	\$1,334,440	\$1,824,220	\$1,224,940	\$1,395,760
Reconstruction	55,700	54,325	26,825	54,100	54,900
Temporary	180,900	332,100	283,500	296,100	388,800
Total	\$1,871,020	\$1,720,865	\$2,134,545	\$1,575,140	\$1,839,460

Source: Costa 1996

Road Density

Road density is a measure of road miles per square mile of land base in a given area such as a VCU. Generally, the higher the density, the higher the potential for environmental impacts such as erosion, wildlife disturbance, and disruption of recreation experience. Table 4-29 shows that for all action alternatives, the road density within the Project Area would be approximately the same.

Table 4-29

Road Density by Alternative

VCU	Square Miles	A	B	C	D	E	F
2041	1.2	0.00	0.00	0.52	0.52	0.00	0.52
2160	16.4	0.44	0.76	0.98	0.98	0.96	0.98
2200	27.7	0.45	0.51	0.47	0.45 ¹	0.46	0.51
2210	7.4	0.00	0.10	0.10	0.10	0.00	0.00
2221	8.3	0.42	0.57	0.58	0.66	0.58	0.59
Average Density		0.38	0.53	0.57	0.58	0.55	0.59

Source: Costa 1996

1. Existing system roads in VCU, even though no harvest is planned in Alt. D.

4 Environmental Consequences

Table 4-30
Summary of Existing and Proposed Road Miles by Alternative and VCU

VCU	Route	Status	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E	Alt. F
2041	7500	P	0.00	0.00	0.16	0.16	0.00	0.16
	Temporary	T	0.00	0.00	0.45	0.45	0.00	0.45
2160	7500	E	4.97	4.97	4.97	4.97	4.97	4.97
	7502	E	1.82	1.82	1.82	1.82	1.82	1.82
	7507	E	0.08	0.08	0.08	0.08	0.08	0.08
	7509	E	0.42	0.42	0.00	0.00	0.00	0.00
	75021	E	0.22	0.22	0.22	0.22	0.22	0.22
	7500	P	0.00	1.73	2.05	2.05	1.73	2.05
	7508	P	0.00	0.00	1.02	1.02	1.02	1.02
	75007	P	0.00	1.76	1.81	1.81	1.81	1.81
	75021	P	0.00	0.54	0.54	0.54	0.54	0.54
	750071	P	0.00	0.99	0.99	0.99	0.99	0.99
	Temporary	T	0.00	0.90	2.61	2.61	2.61	2.61
2200	7500	E	9.61	9.61	9.61	0.00	9.61	9.50
	7501	E	0.61	0.61	0.61	0.00	0.61	0.61
	75003	E	0.13	0.13	0.00	0.00	0.00	0.13
	75004	E	0.60	0.60	0.60	0.00	0.60	0.60
	75012	E	0.18	0.18	0.18	0.00	0.00	0.18
	7501	P	0.00	0.94	0.94	0.00	0.94	0.94
	75002	P	0.00	0.00	0.00	0.00	0.00	0.15
	75003	P	0.00	0.54	0.00	0.00	0.00	0.54
	75004	P	0.00	0.56	0.56	0.00	0.56	0.56
	Temporary	T	0.00	1.02	0.54	0.00	0.44	1.02
2210	7502	P	0.00	0.76	0.00	0.76	0.00	0.00
2221	7502	E	3.52	3.52	3.52	3.52	3.40	3.52
	75023	E	0.21	0.00	0.00	0.00	0.21	0.21
	75028	E	0.12	0.12	0.12	0.12	0.12	0.12
	7502	P	0.00	0.94	0.27	0.94	0.00	0.00
	75028	P	0.00	0.00	0.80	0.80	0.80	0.80
	Temporary	T	0.00	0.09	0.09	0.09	0.24	0.24
Total Existing Road Miles			22.49	22.28	21.73	10.73	21.64	21.96
Total Proposed Road Miles			0.00	7.77	9.14	9.07	8.39	9.56
Total Temporary Road Miles			0.00	2.01	3.69	3.15	3.29	4.32
Total Road Miles by Alternative			22.49	32.06	34.56	22.95	33.32	35.84

Source: Costa 1996

Note: Not all existing roads are used in each alternative.

E = Existing road

P = Proposed Road

T = Temporary Road

Stream Crossings and Bridges

During field reconnaissance of existing and proposed road routes, engineers identified stream crossings where drainage structures would need to provide for fish passage. In some cases (for example, large "V" notches), installation of a bridge would have fewer resource impacts than large amounts of fill material and a culvert. In other instances (for example, old bridges on the existing road system) bridges could be replaced with large, oversized culverts and still provide for fish passage. This would reduce construction costs in the short term, as well as long-term maintenance costs. See Road Cards (Appendix I) for specific design requirements and recommendations for drainage structures.

Eight stream crossings likely requiring bridges were identified on new roads. The number of bridges to be constructed or reconstructed for each alternative is displayed in Table 4-31. The estimated costs are also shown. There are a limited number of log stringers available for log bridge construction in the Project Area. Some bridges, located on temporary roads or roads that would be closed upon completion of logging, may be built with log stringers. Steel modular bridges are planned for roads that would be kept open after harvest. This takes advantage of the longer life and lower long-term maintenance costs of steel structures versus the short life span of log stringer bridges. Steel modular bridges are also capable of being removed and used in other locations, which would reduce overall costs.

Table 4-31
Projected New and Replacement Bridge Costs by Alternative

	Alt. B	Alt. C	Alt. D	Alt. E	Alt. F
Existing bridges:					
Replacement Cost	\$1,047,000	\$1,047,000	\$75,000	\$361,700	\$361,700
(number of bridges)	(22)	(22)	(15)	(22)	(22)
New bridges:					
Construction cost	\$38,750	\$38,750	\$23,750	\$38,750	\$38,750
(number of bridges)	(7)	(7)	(6)	(7)	(7)
Total Bridge cost	\$1,085,750	\$1,085,750	\$98,750	\$400,450	\$400,450
(number of bridges)	(29)	(29)	(21)	(29)	(29)

Source: Costa 1996

Table 4-32 shows that bridge costs play a major role in the economics of this project. Some sort of "bridge re-use" plan may need to be in place to meet the bridging needs for the Indian River transportation system. There are no immediate plans for re-entry into the Project Area within the foreseeable future (20 years). This expected period of non-use, combined with the cost of bridges for this project, raises the following concerns: (1) the maintenance of the large number of bridges during this period; or (2) the closure of the road systems and use of these bridges elsewhere on the Tongass National Forest.

Table 4-32
Estimated Total Construction, Development and Mobilization Costs

	Alt. B	Alt. C	Alt. D	Alt. E	Alt. F
Roads					
Construction and reconstruction cost	\$1,871,020	\$1,720,865	\$2,134,545	\$1,575,140	\$1,839,460
Bridges					
Construction and replacement cost	\$1,085,750	\$1,085,750	\$98,750	\$400,450	\$400,450
LTF, Camp Development, Mobilization Costs	\$232,800	\$250,500	\$284,300	\$264,000	\$221,100
Total Cost	\$3,189,570	\$3,057,115	\$2,517,595	\$2,239,590	\$2,461,010

Source: Costa 1996

4 Environmental Consequences

Log Transfer Facilities (LTFs)

Three LTF sites were identified for this project: a proposed site near 10-Mile Creek; the previously used bulkhead site in Sunshine Cove; and Sunny Too, located just west of the former Sunshine Cove LTF. All three sites meet the siting guidelines developed by the LTF Guidelines Technical Subcommittee (see Appendix K). Two types of LTF are proposed for this project: vertical bulkhead and low-angle, drive-down ramp with rails (see Chapter 2, and the Transportation section in Chapter 3.) Table 4-36 displays the LTFs by alternative.

LTF Construction

The most direct physical effect during LTF construction is the loss of intertidal and shallow subtidal habitats resulting from the placing of fill material. The extent of the impact depends on the type of LTF system selected (see Table 4-33). The greatest area of fill for the LTF sites planned in the Project Area would occur under Alternative F, at the proposed Sunny Too site.

Table 4-33
Intertidal and Shallow Subtidal Fill Acres by LTF Type and Alternative

LTF	Acres of Fill				
	Alt. B	Alt. C	Alt. D	Alt. E	Alt. F
Sunshine Cove (drive-down ramp)	0.15	0.15			
Sunshine Cove (bulkhead)				0.13	
10-Mile Creek (drive-down ramp)	0.15		0.15		
Sunny Too (bulkhead)					0.50 ¹
Total Fill Acres	0.30	0.15	0.15	0.13	0.50

Source: Costa 1996

1. Includes access road on tidelands

LTF Operation

Timber harvest operations at the LTF site (such as log dumping, sorting, and rafting) result in bark and wood debris deposition, short-term changes in marine substrate characteristics from bark accumulation, and loss of whole logs through sinkage. Impacts would vary with the type of log entry system, water depth, substrate composition, log species, season and volume of the operation, and prevailing currents and circulation patterns (Costa 1996).

Bark loss and deposition occur during the transfer of logs from land to water. Alternative C would have the greatest estimated area of bark deposition as a result of having the highest volume transported over a drive-down ramp. Currents and tides would affect bark dispersion patterns. Debris dispersion would be greatest at the 10-Mile Creek site due to greater tidal influences along the Tenakee Inlet (Boes 1996). (See Tables 4-33 and 4-34.)

Table 4-34
Acres of Bark Deposition and Dispersion at LTF Sites

LTF Site	Transfer System	Area of Bark Deposition	Area of Bark Dispersion
Sunshine Cove	Drive-down ramp	0.10	1.25
	Bulkhead	<0.01	(includes area from prior harvest activity)
10-Mile Cr.	Drive-down ramp	0.05	1.50
Sunny Too	Bulkhead	<0.01	<0.01

Source: Costa 1996

Table 4-35 displays the timber volume to be transported over the LTFs for each action alternative. Log rafting is proposed for Alternatives B, C, and D, and barging is proposed for Alternatives E and F. While barging eliminates the concern of bark debris, it is more costly to implement.

Table 4-35 Timber Volume (mmbf) by Alternative and LTF Type					
	Alt. B	Alt. C	Alt. D	Alt. E	Alt. F
Sunshine Cove	9.9 (Ramp)	28.7 (Ramp)		24.5 (Bulkhead)	
10-Mile Creek	13.9 (Ramp)		24.0 (Ramp)		
Sunny Too					36.9 (Bulkhead)
Source: Costa 1996					

Impacts to Commercial Fisheries Resources

Marine fisheries resources could be impacted through the smothering of marine substrates, macro-algae, and rooted marine plants used by fish for spawning. Loss of incubating eggs would also be an impact. Fisheries resources/habitats observed in the vicinity of the LTF sites include herring spawn, sea cucumber, and dungeness crab habitat. Herring spawn has been documented in the Sunshine Cove area.

The use of either the Sunshine Cove LTF site or the Sunny Too site may be affected if herring spawn does occur there again. This would be addressed through the permitting process, which would include input from the State of Alaska. At this time, there is no documentation of herring at the proposed 10-Mile Creek LTF site. A commercial sea cucumber fishery occurred in Tenakee Inlet in 1997. While sea cucumbers were noted at all three LTF sites, their numbers are not great enough for commercial harvest (Boes 1996). A few dungeness crabs were noted at all three sites during the dives. None of the action alternatives are expected to significantly impact populations of commercial marine resources.

Other Impacts to Marine Resources

Potential indirect effects associated with LTF construction and operation include the introduction of debris into nearshore waters. Such debris might consist of log bundling and rafting straps; bottles, cans, and other refuse; and spilled petroleum products from vehicle and boat operations or maintenance. Fuel oil spills from LTFs are generally not common, but could occur and result in contamination of local waters. Most oil spills are small and occur during fueling operations.

Adverse effects to marine organisms are not anticipated to be of concern because of the tidal mixing and dilution rates expected in all three LTF sites. BMPs, contract clauses, and permit language require that spills be reported and minimized as much as possible.

Compliance with Section 401 water quality certification under the Clean Water Act would also minimize chemical impacts to marine organisms and habitat. Adverse effects due to leachates from wood and bark debris during log dumping would be minimal due to the intermittent use of the LTFs, and low timber volume to be transported. Strong tidal influences would also reduce water quality impacts.

4 Environmental Consequences

Comparison of Alternatives

Alternative B

This alternative proposes construction of 7.8 miles of new road, including the installation of seven new bridges. Approximately 22.3 miles of existing road would be reconstructed, and 22 bridges replaced. Two miles of temporary road would be built, and then obliterated after this harvest entry. (See Table 4-36.)

In Alternative B, two LTF sites are proposed: the former LTF site at Sunshine Cove and a new LTF site at 10-Mile Creek. The Sunshine Cove bulkhead would be reconstructed to accommodate a drive-down ramp with rails. Use of the former site would impact the bark zone of deposit that exists as a result of past logging activities (see Transportation section, Chapter 3). This deposit zone is anticipated to increase minimally as a result of harvest from this project. A Memorandum of Understanding (MOU) has been signed between the Forest Service and the City of Tenakee for the use of the City-owned tidelands at the Sunshine Cove site (see Appendix L).

The proposed LTF at 10-Mile Creek would also be a drive-down ramp with rails. This site is not as protected as Sunshine Cove. The rafting area adjacent to the 10-Mile Creek LTF is located within Tenakee Inlet, which is noted for frequent high winds. Since this site affords very little protection from wind, it is anticipated the operator would form the logs in half-rafts, and then move these across the inlet to Seal Bay. There they would be re-formed into larger rafts for towing. Permits would be required from the Environmental Protection Agency (EPA), Army Corps of Engineers (COE), and Department of Natural Resources (DNR) of the State of Alaska for constructing the ramp and placing logs into the water at this site.

The 10-Mile Creek site would be accessed by constructing 1.70 miles of new road, connecting the LTF with the existing end of Road #7502. This route runs along the east side of 10-Mile Creek. A potential slide area has been identified, and mitigation measures are incorporated in the design of the road (see the Soils and Water Quality section).

While either LTF site could be used, it is likely that only one would be used. The LTF at Sunshine Cove is the most cost effective site for the Indian River Project.

Table 4-36
Summary Comparison of Transportation System and Facilities, by Alternative

	Alt. B	Alt. C	Alt. D	Alt. E	Alt. F
Roads (Miles)					
New Construction	7.8	9.1	9.1	8.4	9.6
Existing	22.3	21.7	10.7	21.6	22.0
Temporary	2.0	3.7	3.2	3.3	4.3
Bridges					
Replacement	22	22	14	22	22
New	7	7	4	7	7
LTF					
Location	10-Mile Creek, Sunshine Cove	Sunshine Cove	10-Mile Creek	Sunshine Cove	Sunny Too
Type	Drive-down ramp	Drive-down ramp	Drive-down ramp	Bulkhead	Bulkhead
Transport Method	Raft	Raft	Raft	Barge	Barge
Camp Location*	Corner Bay	Corner Bay	Seal Bay	Corner Bay	Corner Bay
Volume (mmbf)	23.8	28.7	24.0	24.5	36.9

Source: Costa 1996

* Log camp locations shown have been used by timber purchasers working in the Tenakee Inlet area.

Alternative C

This alternative proposes construction of 9.1 miles of new road, including the installation of seven new bridges. Approximately 21.7 miles of existing road would be reconstructed, and 22 bridges replaced. Approximately 3.7 miles of temporary road would be built, and then obliterated after this harvest entry. (See Table 4-36.)

In Alternative C, the former LTF site at Sunshine Cove would be used. The Sunshine Cove bulkhead would be reconstructed to accommodate a drive-down ramp with rails.

Alternative D

This alternative proposes construction of 9.1 miles of new road, including the installation of four new bridges. Approximately 10.7 miles of existing road would be reconstructed, and 14 bridges replaced. Approximately 3.2 miles of temporary road would be built, and then obliterated after this harvest entry. (See Table 4-36.)

Under Alternative D, no roading activity is proposed in the Indian River drainage (VCU 2200). The section of existing Road # 7500 in this drainage would not be reconstructed and the log stringer bridges would be not replaced. The bridges would deteriorate to a point of having to close this road system to any vehicular traffic. Two existing steel bridges in this segment could be removed and used in other roads needed for this alternative.

Alternative E

This alternative proposes construction of 8.4 miles of new road, including the installation of seven new bridges. Approximately 21.6 miles of existing road would be reconstructed, and 22 bridges replaced. Approximately 3.3 miles of temporary road would be built, and then obliterated after this harvest entry. (See Table 4-36.)

Under Alternative E, the existing Sunshine Cove bulkhead would be reconstructed as a barging facility. The existing rock pit above the LTF site and upland working area would provide areas for a maintenance shop, fuel storage, and log bundle storage. A second rock pit, located a half-mile from the LTF site, has adequate area for sorting and log bundle storage.

Alternative F

This alternative proposes construction of 9.6 miles of new road, including the installation of seven new bridges. Approximately 22 miles of existing road would be reconstructed, and 22 bridges replaced. Approximately 4.3 miles of temporary road would be built, and then obliterated after this harvest entry. (See Table 4-36.)

Alternative F proposes constructing a LTF bulkhead (Sunny Too) on a partially submerged rock formation in the Sunshine Cove area, located on State of Alaska tidelands west of the former LTF site. The bulkhead facility would be constructed with log cribbing and back-filled with clean shot rock. The Sunny Too LTF would not be subject to the MOU with the City of Tenakee. A tidelands permit would have to be obtained from the State of Alaska, however, for placing 4,000 to 5,000 cubic yards of clean shot rock needed for bulkhead and access road construction.

Alternative F would also require constructing 0.15 miles of new road (#75002) to access the LTF. The State DNR has indicated a willingness to issue a road easement for this, over State lands to the tidelands (Schauwecker 1996). The road alignment overlaps approximately 200 feet of the East Tenakee trail, which would require a practical and visually acceptable relocation. (See the Heritage and Lands sections in this chapter.)

4 Environmental Consequences

Logging Camps

Alternatives B, C, E, and F would use either a floating camp or the former upland camp area at Corner Bay, under a special use permit. (See Table 4-36.)

A floating camp near 10-Mile Creek would likely be used for Alternative D. Seal Bay, located four miles south of 10-Mile Creek, is the closest bay affording protection for both log storage and placement of the floating camp. Saltery Bay, located nine miles southeast of the 10-Mile Creek LTF, is much smaller and over twice as far from the Project Area as the Seal Bay location.

Both Seal Bay and Long Bay (located northwest of Seal Bay) are located in an area designated in the modified 1997 Forest Plan as an Old Growth Reserve (OGR). Since there will be no harvest activity or ground disturbance within the OGR, log storage and floating camp anchorage are compatible with this designation. Minimum needs in the immediate area of a floating camp include a year-around fresh water source, a location for incinerating burnable garbage, and several shore ties to hold the barge in place. Occupation of tidelands along with access to the upland would probably not exceed four years.

All alternatives would require boating to and from the Project Area from the south side of Tenakee Inlet, regardless of which camp site is selected.

Road and Unit Network Analysis

The computer Scheduling and Network Analysis Program (SNAP) was used to analyze the units and roads to be included in each of the harvest alternatives for this project. After the alternatives were developed, a final SNAP analysis was completed for each to determine its net economic value. These values provided a comparison between the alternatives.

Table 4-37 displays the results and represents the SNAP net value of the alternatives. The relative ranking in the table shows that Alternative F has the highest SNAP value and Alternative B has the lowest. The proposed harvest volume, miles of road utilized, and facilities costs are also displayed for comparison. The total facilities cost per mbf displayed in Table 4-37 range from \$62 to \$127 per mbf. This is a high cost compared to past timber offerings on the Tongass National Forest, primarily because of expensive bridge replacement.

Table 4-37 Net (SNAP) Values					
	Alt. B	Alt. C	Alt. D	Alt. E	Alt. F
Current (1996) Net Value (SNAP) and relative ranking(\$/mbf)	\$14.38 (5)	\$84.48 (2)	\$68.27 (4)	\$80.43 (3)	\$94.09 (1)
Proposed harvest volume (mmbf)	23.8	28.7	24.0	24.5	36.9
Facilities: Cost/MBF	\$127.07	\$99.26	\$97.58	\$87.48	\$62.00
Total Road Miles	32.06	34.56	22.95	33.32	35.84
Source: Peterson 1996					

Economics and Social Values

Direct, Indirect, and Cumulative Impacts

Tongass National Forest timber sale projects have historically had a variety of positive and negative effects on local communities. To communities dependent on the timber industry, these projects may be seen as beneficial to their way of life, with the guarantee of continued employment for their residents. To other communities more dependent on subsistence gathering, these projects may act as a hindrance in the day-to-day lives of their residents.

The Project may have effects on local subsistence and recreation patterns. This would be due mainly to wildlife habitat modification, enhanced or restricted access, changes to the visual and aesthetic character of the area, and new competition from logging camp residents over the short and long term. On the other hand, the Project would have a positive effect on local community economies if a small, local wood products industry were developed, or if the harvest operations were to generate logging and other jobs for local residents. In addition, the Project would contribute to Federal Treasury payments (25-percent fund) to each community.

For the Indian River Project, an attempt was made to strike a balance to deliver forest resources to the public in all action alternatives. A reasonable range of alternatives has been developed to meet the purpose and need for the Project, using multiple-use and sustained-yield principles and the concepts of ecosystem management and forest health. Furthermore, these alternatives were developed with recognition of the desires of the public, current policies, and political pressures. Each alternative delivers a broad array of forest resources in varying degrees.

Wood Products Industry

The Indian River Project is not expected to have major effects on the size, demographic make-up, or growth trends of the Southeast Alaska population. This is due, in part, to the fact that the five action alternatives are designed to maintain and contribute to a stable level of timber harvest in the Tongass National Forest. This, in turn, leads to a stable community environment. However, under the no-action alternative, operators of some logging and milling enterprises may be forced to slow down or shut down their operations altogether if no other sources of timber are located. Under this scenario, a negative ripple effect could spread out across the various economic sectors in Southeast Alaska that indirectly benefit from timber related employment. This would likely result in slower growth or declining populations in some area communities. Likewise, declining timber receipts could result in smaller Federal Treasury payments to the communities over the long term. Over the short term, Southeast Alaska Economic Funds would mitigate this potential reduction in payments, and help maintain community stability. Implementation of any of the action alternatives is not expected to have any major direct, indirect, or cumulative impacts on civil rights, minorities, and women.

The National Forest Management Act of 1976 (NFMA) explicitly requires economic efficiency analyses of National Forest management proposals. The Forest Service has generally tried to achieve cost-efficient management (lowest possible input cost per unit of output). However, systematic evaluation of all costs and benefits from practices and activities has been undertaken only in recent years. Also, while economic efficiency must be analyzed and considered, it is not the sole decision criterion.

To estimate the economic effects of the alternatives, it is assumed that other factors affecting the wood products market remain constant. It is important to note that the amount of timber offered for sale by this project is only one of many factors that ultimately

4 Environmental Consequences

influences employment in the region's wood products industry. Other factors that would influence employment are:

- the type of wood processing facilities available in the region;
- the supply, demand, and value of the products manufactured;
- worker productivity;
- the amount of capital investment;
- the technology employed;
- interest rates;
- foreign exchange rates; and
- timber management decisions made by other forest owners.

The employment and income effects of the alternatives were estimated using the industry-wide average of 8.24 jobs per million board feet harvested. This figure was calculated by the Forest Service economic model IMPLAN (in base year 1992; see Table 4-38 for figures). The associated income effects were also calculated using coefficients generated by the IMPLAN model. The economic effects reported in Table 4-38 include direct and secondary effects. For purposes of this analysis it was assumed that the timber volume in the action alternatives would be offered in varying amounts over a four-year period. Harvest is assumed to occur during the year following the sale award. Actual harvest may occur over either a shorter or a more extended time frame.

Table 4-38
Direct and Indirect Employment and Income by Alternative

Year Harvest is Planned *	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E	Alt. F
1st Year No. Jobs	0	84	79	75	55	90
2nd Year No. Jobs	0	69	65	60	55	75
3rd Year No. Jobs	0	43	49	39	47	74
4th Year No. Jobs	0	0	44	24	45	65
Total Jobs (yr. 1-4)	0	196	237	198	202	304
Average Annual Number of Jobs	0	49	59	49	50	76
Average Annual Earning (\$ millions)	0	\$2.1	\$2.6	\$2.2	\$2.2	\$3.3
Total Earnings (\$ Million)	0	\$8.4	\$10.1	\$8.5	\$8.6	\$13.0

Source: Regan and Peterson 1997

* Assumes harvest would begin in 2000 and be completed in 2003.

Timber harvested under the action alternatives would provide a source of wood to independent, operating mills throughout the region. This project alone would not be of sufficient duration to encourage investment in new facilities. The primary effect would be retention of existing employment levels.

The no-action alternative (Alternative A) could result in fewer timber-related jobs if regional mills are not able to purchase wood from another source. See Chapter 4, Timber for further discussion of timber economic effects.

Commercial Fishing Industry

Current standards and guidelines for timber harvest activities are expected to limit adverse effects on fish habitat and fish populations. Jobs in the fishing industry are not expected to change due to implementing any of the project alternatives.

Subsistence, Recreation, and Tourism

Alternative F would have the greatest positive impact to a timber products industry, and the greatest negative impact to subsistence lifestyles if restrictions on subsistence uses are imposed. The tourism industry may also be negatively impacted if commercial recreation providers decide to take their customers somewhere else for an Alaskan experience, or reduce the size of their operations. Alternative A, the no-action alternative, would have the least negative impact to subsistence lifestyles and the tourism industry, but would not support a local or regional wood products industry.

Of the action alternatives, Alternative D would have the smallest negative impact to subsistence lifestyle because most harvest activities are located away from subsistence use areas near Tenakee Springs.

Although Alternative B harvests the smallest amount of timber of all the action alternatives, it spreads impacts throughout the Project Area by partially harvesting more acres than clearcutting them. Over the short term, subsistence users and the tourism industry could consider this a positive effect. Over the long term, however, partial harvest would result in negative impacts. See Chapter 4, Subsistence and Recreation sections for discussions of economic effects to these resources.

Community Effects

Angoon

Implementation of any of the action alternatives is not expected to have any major direct, indirect, or cumulative impacts on the socioeconomics of Angoon and its residents. This is due largely to Angoon's dependence on commercial fishing and subsistence, rather than timber, as the primary factor influencing the community. It is possible that some residents may be hired for timber harvest and road construction, which would add income to the community; this number would probably be small, however.

Hoonah

Implementation of any of the action alternatives is not expected to have any major direct, indirect, or cumulative impacts on the socioeconomics of Hoonah and its residents. Commercial fishing and subsistence would continue as primary factors influencing Hoonah. It is possible that some residents may be hired for timber harvest and road construction, which would add income to the community; however, it would be difficult to determine any numbers or figures at this time.

Tenakee Springs

Implementation of any of the alternatives is not expected to have any major direct, indirect, or cumulative impacts on the socioeconomics of Tenakee Springs and its residents. This is due largely to Tenakee Springs' dependence on commercial fishing and subsistence, rather than timber, as the primary factor influencing the community. There could be short-term impacts on the growing tourism sector if visitors decide they do not want to see timber management activities at the LTF site(s). The City of Tenakee Springs would receive income from user fees and taxes from the LTF agreement for the Sunshine Cove site (Alternatives B, C, and E). It is possible that some residents may be hired and some goods and services purchased locally by contractors for timber harvest and road construction activities. This would add income and tax revenue to the community. Some residents who use motorized vehicles to access the road system may feel that their traditional lifestyle has been restricted by closing roads. However, the road system would remain open to non-motorized means of access, such as hiking, cross-country skiing, and mountain biking.

Other Environmental Considerations

Implementing any action alternative may result in some adverse environmental effects that cannot be effectively mitigated or avoided if the action is to take place. The interdisciplinary procedure used to identify specific harvest units and roads was designed to eliminate or reduce the significant adverse consequences. In addition, the extent, severity, and duration of these effects are limited by application of standards and guidelines, BMPs, and mitigation measures. A monitoring plan has also been developed to determine if adverse consequences are occurring. The specific environmental effects of the alternatives were discussed earlier in this chapter. Proposed mitigation measures are discussed in Appendices C, I, and J. Although potentially adverse environmental effects were avoided in forming the alternatives, some adverse effects to the environment that cannot be completely mitigated may occur.

Probable Adverse Environmental Effects that Cannot be Avoided

Standards and guidelines, BMPs, and mitigation measures that prevent significant adverse effects to soil and water would be implemented. However, the potential for adverse effects does exist. Sediment production would occur as long as roads are being built and timber is harvested. Surface erosion, channel erosion, and mass movement would produce sediment. The monitoring plan is designed to determine to what extent these adverse consequences are occurring, and whether additional remedial measures may be necessary.

Disturbance, displacement, or loss of wildlife may occur as a consequence of habitat loss and increased human activity in the Project Area. New road construction and the human activities associated with new access to areas previously unroaded may result in effects to wildlife. Improved access into areas that previously had limited roads would have similar effects. RMOs would be implemented to control motorized vehicle access.

The amount and distribution of mature and old-growth stands would be reduced through implementation of any action alternative. The rate and severity of adverse effects varies by alternative. Because some wildlife species rely on habitat conditions provided by old-growth stands, reductions in their populations are to be expected. As old-growth and mature timber stands are converted to young even-aged stands, the capability of the Project Area to provide optimal habitat for old-growth dependent species would be reduced. Fragmentation of old-growth habitats would occur. Over the long term, canopy closure effects would result in habitat capability reductions.

Timber harvest and road construction in areas that are currently unroaded would alter natural characteristics. This would modify the recreational experiences that are offered by these areas. Some natural setting recreational opportunities would be lost by these actions.

The natural landscape would appear visually altered by timber harvest, particularly where logging activity is highly visible from travel routes. These adverse effects would eventually be reduced by growth of vegetation. Other effects on the natural appearance of the landscape include roads and structures that are highly visible despite efforts to blend them with landforms and mitigate the effect by landscaping.

The intensity and duration of these effects depend on the alternative and the mitigation measures applied to protect the resources. Most unavoidable effects are expected to be short-term (usually less than two years). In all cases, the effects would be managed to comply with established legal limits, such as maximum time for regeneration. To check and reduce these effects, monitoring procedures and mitigation measures have been planned for those areas that may be affected. Certain monitoring procedures and mitigation measures are required by existing standards or guidelines.

Relationship Between Short- term Uses and Long-term Productivity

All alternatives would come under the mandate of the Multiple Use and Sustained Yield Act of 1960. This act requires the Forest Service to manage National Forest lands for multiple uses, including timber, recreation, fish and wildlife, range, and watershed. All renewable resources are to be managed in such a way that they are available for future generations. The harvesting and use of standing timber can be considered a short-term use of a renewable resource. As a renewable resource, trees can be re-established and grown again if the productivity of the land is not impaired.

Maintaining the productivity of the land is a long-term objective. All alternatives protect the long-term productivity of the Project Area through the use of specific standards and guidelines, mitigation measures, and BMPs. Long-term productivity could change as a result of various management activities proposed in the alternatives. Timber management activities would have direct, indirect, and cumulative effects on the economic, social, and biological environment.

Soil and water are two key factors in ecosystem productivity, and these resources would be protected in all alternatives to avoid damage that could take many decades to rectify. Sustained yield of timber, wildlife habitat, and other renewable resources all rely on maintaining long-term soil productivity. Quality and quantity of water from the Project Area may fluctuate as a result of short-term uses; however, no long-term effects to the water resource are expected to occur as a result of timber management activities.

All alternatives would provide the fish and wildlife habitat necessary to maintain viable populations of existing native and desired non-native vertebrate species throughout the Project Area. The abundance and diversity of wildlife species depend on the quality, quantity, and distribution of habitat, whether used for breeding, feeding, or resting. Management indicator species (MIS) are used to represent the habitat requirements of all fish and wildlife species found in the Project Area. By managing habitats and populations of indicator species, the other species associated with the same habitat would also benefit. The alternatives provide standards, guidelines, and mitigation measures for maintaining long-term habitat and species productivity. The alternatives vary in the risk presented to both wildlife habitat and habitat capability.

Timber rotations are planned on all sites for 200 years. The harvest of group selection and single tree selection units would not be completed for 160 to 200 years. When the first rotation is complete, mature, even-aged timber stands would be harvested again on a new rotation. The uneven-aged sites would have continuous cutting cycles in perpetuity. Management of the timber resource on these rotations could affect long-term productivity, depending on the intensity of silvicultural practices. Projected timber rotation lengths are not anticipated to affect long-term productivity. Mitigation measures are planned under all the alternatives to ensure future availability of other renewable resources as well.

Opportunities for dispersed recreation use (hiking, camping, fishing, hunting, and viewing the natural scenery) would be maintained and increased for future generations. The setting in which these activities occur varies by alternative, but the long-term potential for the Project Area to provide a spectrum of recreation opportunities would be maintained in all alternatives.

4 Environmental Consequences

Irreversible and Irretrievable Commitments of Resources

Irreversible commitments of resources are decisions to use, modify, or otherwise affect nonrenewable resources such as cultural resources or minerals. It could also apply to resources renewable only over a long period of time, such as soil productivity or old-growth forests. Such commitments of resources are considered irreversible because the resource is affected to the point that renewal can occur only over a long period of time or at a great expense, or the resource has been destroyed or permanently removed. All alternatives result in some irreversible commitments, although the extent and potential for adverse effects increase in alternatives that emphasize resource extraction and utilization.

Irretrievable commitments represent opportunities foregone for the period of the proposed actions, during which other resource utilization cannot be realized. These decisions are reversible, but the utilization opportunities foregone are irretrievable. Under multiple-use management, some irretrievable commitments of resources are unavoidable due to the mutually exclusive relationship between some resources. An example of such a commitment is development of logging camps and LTFs that would be removed at the completion of logging activities. These developments occupy approximately five to ten acres and include bunkhouses, mobile homes, fuel storage facilities and such. For the three to five years that such developments exist, the opportunity to utilize these areas otherwise is foregone and thus irretrievable.

The irreversible disturbance of some types of cultural resources may occur as a consequence of management activities. This would be especially true for subsurface resources that cannot be located through surface surveys. Even with mitigation, unanticipated or unavoidable disturbances can result in the loss of cultural values. Mitigation efforts such as data recovery involve the scientific and controlled destruction of a cultural resource site. Once undertaken, the effects are irreversible and the mitigation effort becomes an irretrievable commitment to the resource.

The uses of energy resources and the removal of mineral resources are irreversible commitments of resources. The use of rock resources for road and facility construction is an example (see Table 4-1). The use of fossil fuels during project administration activities would be an irreversible resource commitment (see Table 4-39). Alternatives vary by the amount of energy and mineral resources used; the no-action alternative abstains from the use of these nonrenewable resources at this time.

An irreversible loss occurs when forests of old-growth trees are harvested, fragmented, or removed for the construction of roads or other purposes. Old-growth stands provide key wildlife habitat and are also valued for ecological and aesthetic reasons. Because old-growth stands take more than 150 years to develop, the commitment of this resource to certain uses is reversible over a long period of time. Table 4-8 displays remaining old growth by alternative.

Some long-term uses of the land cause an irreversible loss of soil productivity. Examples of these uses include the establishment of local and collector roads and LTFs. Table 4-30 displays miles of new and reconstructed roads, and Table 4-36 displays LTFs.

**Possible
Conflicts with
Plans and
Policies of
Other
Jurisdictions**

Regulations for implementing NEPA require a determination of possible conflicts between the proposed action and the objectives of Federal, State, and local land use plans, policies, and controls for the area. The major land use regulations of concern are the Coastal Zone Management Act (CZMA), Section 810 of the ANILCA, and the State of Alaska's Forest Practices Act. A discussion of each of these determinations is presented below.

Coastal Zone Management Act of 1976 (CZMA)

The CZMA was passed by Congress in 1976 and amended in 1990. This amended law requires Federal agencies conducting activities or undertaking development which affect the coastal zone to ensure that the activities or developments are consistent with the enforceable policies of approved State coastal management programs to the maximum extent practicable. The State of Alaska passed the Alaska Coastal Management Act in 1977 to establish a program that meets the requirements of the CZMA. It contains the standards and criteria for determining consistency for activities within the coastal zone.

The consistency evaluation will consider: Alaska Statute Title 46, Water, Air, Energy, and Environmental Conservation; and the Alaska Forest Practices Act of 1990.

The Forest Service has evaluated the alternatives to ensure that the activities and developments affecting the coastal zone are consistent with approved coastal management programs to the maximum extent practicable. The standards and guidelines for timber management activities in the Project Area meet or exceed those indicated in the Alaska Forest Practices Act and the ACMP.

Evaluating the proposed activities against the enforceable policies for activities within the coastal zone results in a finding that these activities are consistent with the ACMP to the maximum extent practicable. The State of Alaska Division of Governmental Coordination completed their consistency review of the preferred alternative, and concurred with the Forest Service finding on March 24, 1998.

Alaska National Interest Lands Conservation Act of 1980 (ANILCA)

Under Section 810 of the ANILCA, agencies are required to evaluate the effects of proposed actions on subsistence uses of Federal land, and to determine if the proposed action may significantly restrict subsistence opportunities. See the Subsistence section in this chapter for the evaluation of subsistence use effects.

State of Alaska's Forest Practices Act of 1990

On May 11, 1990, Governor Cowper approved the legislature's major revision of the State's Forest Practices Act. The revised act significantly increases the State's role in providing protection and management for important forest resources on State and private lands. The revised Forest Practices Act will also affect National Forest management through its relationship to the ACMP and the Federal CZMA (see above discussion).

For National Forest timber operations such as proposed for the Indian River Project, the effect of the revised Forest Practices Act is essentially twofold. First, it clarifies that the revised Forest Practices Act is the standard which must be used for evaluating timber harvest activities on Federal lands for purposes of determining ACMP consistency.

Second, it calls for minimum 100-foot buffers on all Class I streams, and it recognizes that ACMP consistency is attainable in Federal timber harvest activities using specific methodologies that may differ from those required by the revised Forest Practices Act or its implementing regulations.

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Stream buffers in this project have a minimum width of 100-foot horizontal distance from the edge of either side of Class I streams and those Class II streams which flow directly into Class I streams, in order to comply with the State of Alaska's Forest Practices Act, as well as the TTRA, ACMP, and CZMA. (See Tongass Timber Reform Act, below.)

Compliance With Other Laws and Executive Orders

National Forest Management Act

The National Forest Management Act (NFMA) requires specific determinations regarding consistency with the modified 1997 Forest Plan and Regional Guide. It also requires a determination of clearcutting as the optimal method of harvesting, and specific authorization of clearcuts over 100 acres. Final determinations will be made in the Record of Decision for the Final Environmental Impact Statement.

Tongass Land and Resource Management Plan and Alaska Regional Guide. This project plan is consistent with the modified 1997 Tongass Land and Resource Management Plan and the Alaska Regional Guide.

Clearcutting as the Optimal Method of Harvesting. The Alaska Regional Guide established management direction and standards for western hemlock-Sitka spruce forest type (Alaska Regional Guide, page 3-18). The Guide states that even-aged management in the form of clearcutting will be used only where this practice is determined to be optimum to meet the objectives and requirements of the Forest Plan, where there is a high risk of dwarf mistletoe reinfection, or where risk of windthrow is determined to be high. Dwarf mistletoe is somewhat of a problem in specific areas within the Indian River Project Area. All harvest units in this project proposed for the harvest method of clearcut with reserves have either a high level of mistletoe infection or a high risk of windthrow. Clearcutting the units will help meet the objective of maintaining fast growing, mistletoe-free stands of mixed species. It is the optimum method of harvesting, considering the following factors referenced in the Alaska Regional Guide:

Hemlock dwarf mistletoe, *Arcanthobium tsugense*, an important parasite of western hemlock can best be controlled by clearcutting. Elimination of residual overstory trees infected with dwarf mistletoe prevents infection of western hemlock in the new stand. Risk of blowdown in residual stands is eliminated. The chance of blowdown along cutting boundaries is increased but can be reduced through proper design of cutting units.

In addition to the direction in the Alaska Regional Guide, the Chief of the Forest Service established new provisions in June 1992 for the reduction of clearcutting on National Forest System Lands. The new provisions state that clearcutting is to be limited to areas that involve at least one of seven specific circumstances. The clearcuts prescribed in the Indian River Project Area meet the following circumstances as specified in that direction:

"Provide for the establishment and growth of desired trees or other vegetative species that are shade intolerant."

"To preclude or minimize the occurrence of potentially adverse impacts or insect or disease infestations, windthrow, logging damage, or other factors affecting forest health" (USDA Forest Service 1992).

Clearcuts Over 100 Acres in Size. There are no units in any of the action alternatives that create openings exceeding 100 acres.

Tongass Timber Reform Act

Harvest units would maintain a minimum 100-foot buffer for all Class I streams and Class II streams that flow directly into Class I streams, as required in Section 103 of the TTRA. The actual widths of these buffers would often be greater than the 100-foot minimum. Unit cards include BMPs for protection for all streams of all classes.

Endangered Species Act

The action alternatives would not have a direct, indirect, or cumulative effect on any threatened or endangered species in the Indian River Project Area. A biological assessment and evaluation are included in Appendix B of this EIS.

Bald and Golden Eagle Protection Act

Management activities inconsistent with current bald eagle use within 330 feet of an eagle nest tree are restricted by an Interagency Agreement between the Forest Service and the U.S. Fish and Wildlife Service. One variance from the Agreement would be needed for Alternative B or D, for road construction blasting within one-half mile of a nest tree.

Clean Water Act

The location of harvest units and roads was guided by the standards, guidelines, and direction contained in the modified 1997 Forest Plan, the Alaska Regional Guide, and applicable Forest Service manuals and handbooks. The road cards and unit cards (Appendices I and J) contain specific details on practices prescribed to prevent or reduce non-point sediment sources. Implementation with site-specific application and monitoring of approved BMPs would comply with State Water Quality Standards Regulations. These regulations provide for variances from anti-deregulation requirements and water quality criteria. The harvest and road building operators would be responsible for compliance, including obtaining any variance required by the State, and would be monitored for compliance by the Forest Service. The Forest Service expects the Indian River Project activities to fully qualify for any variance required by the State, according to the criteria in 18 AAC 70.015.

A monitoring plan to detect and evaluate possible effects of bark accumulations, oil sheens, and surface runoff would be implemented as a part of the permitting process for log transfer facilities (BMP 14.4, FSH 2509.22).

National Historic Preservation Act

Heritage resource surveys have been completed in the Project Area. The State Historic Preservation Officer has been consulted and concurred with the finding that Alternatives A through E would have no effect on heritage resources. Alternative F would have an adverse effect on a small portion of the East Tenakee Trail (Sit-468) constructed by the Civilian Conservation Corps (CCC). Forest Service timber sale contracts contain enforceable measures for protecting any undiscovered heritage resources that might be encountered during sale operations.

Clean Air Act

The action alternatives would not have a direct, indirect, or cumulative effect on air or atmospheric resources. Air quality would be maintained by following the standards and guidelines in the modified 1997 Forest Plan.

Wild and Scenic Rivers Act

The modified 1997 Forest Plan EIS Record of Decision did not recommend any rivers in the Project Area for inclusion in the National Wild and Scenic Rivers System.

Federal Cave Resource Protection Act of 1988

The action alternatives would not have a direct, indirect, or cumulative effect on any significant cave in the Indian River Project Area. One cave resource in the Project Area has been designated as a significant cave.

Executive Order 11988

Executive Order 11988 directs Federal agencies to take action to avoid, to the extent possible, the long- and short-term impacts associated with the occupancy and modification of floodplains. The numerous streams in the Indian River Project Area make it impossible to avoid all floodplains during timber harvest and road construction. The action alternatives include less than five acres of timber management activities within floodplains. The design of the developments and the application of BMPs would combine to minimize adverse impacts.

Executive Order 11990

Executive Order 11990 requires Federal agencies to avoid to the extent possible the long- and short-term adverse impacts associated with the destruction or modification of wetlands. The action alternatives avoid most identified wetlands. However, many small wetlands or muskegs occur as inclusions with forested areas. These areas may be altered by timber harvest or road construction; however, techniques and practices required by the Forest Service would maintain wetland attributes. It is estimated there would only be minimal loss of wetlands with any of the alternatives. Soil moisture regimes and vegetation on some wetlands may be altered in some cases; these altered acres would still be classified as wetlands, and function as wetlands in the ecosystem.

Executive Order 12898

Executive Order 12898 directs Federal agencies to identify and address the issue of environmental justice – adverse human health and environmental effects of agency programs that disproportionately impact minority and low-income populations. The order specifically directs agencies to consider patterns of subsistence hunting and fishing when an agency action may affect fish or wildlife (see Subsistence section in this chapter). The issue of environmental justice has been addressed through the Indian River NEPA analysis by identifying minority or low-income communities that may be affected by timber management activities (Angoon, Hoonah, Tenakee Springs); by ensuring that scoping and public involvement activities reach those communities; by evaluating the effects of the alternatives on such communities (see the Economics and Social Values section in this chapter); and by documenting the analysis in this EIS.

Executive Order 12962

Executive Order 12962 directs Federal agencies, to the extent permitted by law and where practicable, to improve the quantity, function, sustainable productivity, and distribution of U.S. aquatic resources for increased recreational fishing opportunities. Federal agencies are required to evaluate the effects of federally funded, permitted, or authorized actions on aquatic systems and recreational fisheries and document those effects relative to the purpose of the order. Planning for the Indian River Project included documentation of existing recreational fisheries opportunities; protection of riparian, water quality, and fisheries habitats; and identification of fisheries enhancement opportunities. Harvest unit and road design are consistent with the standards and guidelines in the modified 1997 Forest Plan.

Potential Energy Requirements and Conservation Potential of Alternatives

The implementation of the action alternatives in the Project Area would require the expenditure of energy (for example, fuel consumption). The amount of energy used varies by alternative based on timber volume harvested and miles of road constructed. The direct effect of the alternatives on energy requirements would be attributed to timber harvest, road construction, and travel necessary to administer the timber sale. Indirect energy requirements include processing wood products and the transport of products to secondary processors and consumers. The estimated total fuel consumption required for each alternative is displayed in Table 4-39.

Table 4-39 Estimated Fuel Consumption (Millions of Gallons) by Alternative						
Alternative	A	B	C	D	E	F
Preparation and Administration (1.56 gallons/mbf)	0	0.04	0.05	0.04	0.04	0.06
Logging and Transportation (14.8 gallons/mbf)	0	0.37	0.46	0.38	0.38	0.59
Helicopter Logging (7.3 gallons/mbf)	0	0.32	0.26	0.23	0.22	0.38
Road Construction and Maintenance (4,000 gallons/mile)	0	0.13	0.14	0.09	0.13	0.14
Total Consumption	0	0.86	0.91	0.74	0.77	1.17
Source: Mork 1996						
*Note: Estimated fuel consumption based on consumption per mbf of sawlog volume and use of an S-64E helicopter.						

Natural or Depletable Resource Requirements and Conservation Potential of Alternatives

All alternatives considered in detail are designed to conform to applicable laws and regulations pertaining to natural or depletable resources, including minerals and energy resources. The Bureau of Land Management (BLM) shares the regulation of mineral and energy activities on the National Forest, under the U.S. Mining Laws Act of May 1872 and the Mineral Leasing Act of February 1920. The demand for National Forest lands access to explore and develop minerals and energy is expected to increase over time.

The action alternatives propose road construction that would increase opportunities for access to the National Forest within the Project Area. This increased access may result in increased activity with regard to potential mineral or energy resource occurrences.

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Other Effects

Urban Quality, Historic and Cultural Resources, and the Design of the Built Environment

The Project Area includes the City of Tenakee Springs, a small urban area. However, all of the built-up areas are on private and State land. Therefore, the only applicable concern under this topic is with historic and cultural resources. The goal of the Forest Service Cultural Resource Management Program is to preserve significant cultural resources in their field setting and ensure that they are available in the future for research, social and cultural purposes, recreation, and education. There are adequate standards, guidelines, and procedures to protect cultural resources and to meet the goals of the Cultural Resource Management Program. Cultural resources and the proposed project design are discussed in the Heritage Resources section of this chapter.

Effects of Alternatives on Consumers, Civil Rights, Minorities, and Women

All Forest Service actions have the potential to produce some form of impact, positive and/or negative, on the civil rights of individuals or groups, including minorities and women. The need to conduct an analysis of this potential impact is required by Forest Service Manual and Handbook direction. The purpose of the impact analysis is to determine the scope, intensity, duration, and direction of impacts resulting from a proposed action. For environmental or natural resource actions as proposed for the Indian River Project, the civil rights impact analysis is an integral part of the procedures and variables associated with the social impact analysis. This analysis is discussed in the Economic and Social Values section of this chapter.

The effect of the alternatives on consumers is reflected in the discussion of the various goods and services supplied as a result of the action alternatives. This analysis occurs throughout this chapter as an integral part of the effects analysis on other environmental components.

Effects of Alternatives on Prime Farm Land, Rangeland, and Forest Land

All alternatives are in keeping with the intent of Secretary of Agriculture Memorandum 1827 for prime land. The Project Area does not contain any prime farm lands or rangelands. Prime forest land does not apply to lands within the National Forest system. In all alternatives, lands administered by the Forest Service are managed with sensitivity to the effects on adjacent lands.

List of Preparers

List of Preparers

Ronald L. Baer, Geologist

B.S., Geology, California State University, 1974

A.A., Math & Physical Science, American River College, 1971

Certificate, Mineral Examiner

Certificate, Mineral Review Examiner, Bureau of Land Management

Forest Service: 21 years

Forest Geologist, Tongass NF, (9 years)

Forest Geologist, Humboldt NF (4 years)

District Geologist, Gallatin NF, Big Timber RD (2 years)

Hydrologist, Lake Take Basin Management Unit (6 years)

Forestry Technician, Eldorado NF, Placerville RD (4 season)

Other Relevant Employment:

District Geologist, BLM Susanville District, California (2 years)

Suzanne P. Beall, Silviculturist

B.S., Forest Resources, University of Washington, 1982

Silviculture Institute XIV, 1991-1992

Certified Silviculturist, Region 10, 1995-Present

Forest Service: 16 years

District Silviculturist, Tongass NF, Sitka RD (5 years)

Timber Stand Improvement Forester, Siuslaw NF, Waldport RD (5 years)

Reforestation Forester, Mt. Baker-Snoqualmie NF, White River RD (6 years)

Stewart Bentley, Biological Technician

B.S., Oregon State University, 1980

Forest Service: 6 seasons

Biological Technician, Tongass NF, Sitka RD, 3 seasons

Biological Technician, Tongass NF, Ketchikan RD, 3 seasons

Bridget Brady, Writer - Editor

B.S., Park Administration, California State Polytechnic University, 1989

A.A., Liberal Arts, Napa College, 1981

Forest Service: 13 years

Writer - Editor, Tongass National Forest, 1 year

Accounting Technician, Tongass National Forest, 6 months

Engineering Technician, Tongass National Forest, 7 years

Survey Technician, Angeles National Forest, 1 year

Recreation Forestry Technician, Los Padres National Forest, 1 year

Fire and Recreation Forestry Technician, Angeles National Forest, 2 years

Chris Budke, Forestry Technician

A.S., Forest Management, Nicolet Institute, Rhinelander, Wisconsin, 1983

Forest Service: 14 years

Timber, Presale - Administration, Tongass NF, Hoonah RD (10 years)

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Joseph E. Costa, Planning Engineer

B.S., Botany, Chico State University, California, 1969

A.A., Civil Engineering Technology, Shasta College, California, 1967

Forest Service: 30 years

Transportation Planner, Tongass NF (9 years)

Forest Transportation Planner, Mendocino NF (9 years)

District Engineer, Lassen NF (6 years)

Design Team Leader, Six Rivers NF (2 years)

Survey & Design Party Chief, Shasta-Trinity NF (4 years)

List of Preparers

Brian Crider, Road Locator

Forest Service: 30 years

Road Locator, Tongass NF, (5 years)
District Engineer, Six Rivers NF (6 years)
Civil Engineering Technician/Road Locator, Six Rivers NF (7 years)
Transportation Planner/Road Locator, Kootenai NF (4 years)
Civil Engineering Technician, Six Rivers NF (8 years)

Brenda Dick, Writer - Editor

B.A., Business Administration, Maryville College, Maryville, Tennessee 1985

Forest Service: 6 years

Writer/Editor, Tongass NF, (3 years)
Information Assistant, Tongass NF, (3 years)

Libby Dougan, Writer - Editor

Natural Resource Mgt/Communications, Humboldt State University, 1972-1978

Forest Service: 8 years

Writer-Editor, Tongass NF
Aircraft Dispatcher, Tongass NF, (4 years)
Personnel Assistant, Tongass NF, (2 years)
District Clerk, Rogue River NF, Prospect RD, (2 years)

William R. Dougan, Silviculturist

B.S., Forest Resource Management, Humboldt State University, 1978
Graduate Study, Silviculture, University of Washington/Oregon State University
Certified Silviculturist, Forest Service, Regions 6 and 10, 1989-present

Forest Service: 21 years

Assistant Forest Silviculturist, Tongass NF, (7 years)
Silviculturist, Rogue River NF, Prospect RD (2 years)
Reforestation Specialist, Siuslaw NF, Waldport RD (6 years)
TSI/Reforestation Technician, Siuslaw NF, Waldport RD (4 years)
Pre-sale/Timber Layout Technician, Mt. Baker-Snoqualmie NF, Skykomish RD (2 years)

Theodore W. Falkner, Civil Engineering Technician

Forestry, Humboldt State University, 1956-1960
Civil Engineering, Humboldt State University, 1960-1962
Civil Engineering, Los Angeles State, 1964-1966

Forest Service: 34 years

GIS Coordinator, Tongass NF, (5 years)
Planner, Tongass NF, (5 years)
Transportation Planner and Logging Engineer, Klamath NF (12 years)
Transportation Planner and Logging Engineer, Sequoia NF (4 years)
Survey Technician, Design Engineer, Angeles NF (4 years)
Survey Technician, Klamath NF (4 years)

James M. Fincher, IRI Program Manager

B.S. Forest Resource Management, University of Montana
M.S. Soil Science, University of New Hampshire

Forest Service (9 years)

Regional Information Manager, Region 10 (3 years)
Ecologist, Tongass National Forest, (2 years)
Soil Scientist, Boise NF (1 years)
Soil Scientist, Beaverhead NF (1 year)
Soil Scientist, Northeast Forest Experiment Station (2 years)

Rick Foster, Soil Scientist

B. S., Soil Science, California State Polytechnic University, 1977
Certified Professional Soil Scientist through ARCPACS (American Registry of
Certified Professionals in Agronomy, Crops, and Soils)
Total Government Service: 19 years

Forest Service: 3½ years

Soil Scientist, Tongass NF, (3½ years)
Soil Conservation Service: 15½ years
Soil Scientist, Vernal, UT (2 years)
Soil Survey Party Leader, Area Correlator, Elko, NV (3½ years)
Soil Specialist, Vernal, UT (10 years)

Tim Garvey, Silviculturist

B.S. Forest Management, University of Michigan, 1973
Silviculture Institute at University of Washington/Oregon State, 1982-83
Certified Silviculturist, Regions 3, 2, and 10, 1979 to present

Forest Service: 22 years

Geographic Information Systems, Tongass NF, (2 years)
Ecosystem Analysis, Tongass NF, (3 years)
Timber Staff Officer, Arapaho NF, Sulphur RD (2 years)
Silviculturist, Arapaho NF, Sulphur RD (6 years)
Silviculturist, Tongass NF, Hoonah RD (4 years)
Silviculturist, Sitgreaves NF, Lakeside RD (2 years)
Timber Inventory Specialist, Apache-Sitgreaves NFs (1 year)
Timber Inventory Specialist, Southern Forest Experiment Station (2 years)

Fred Glenn, Assistant Team Leader/Soil Scientist

B.S. Botany/Chemistry, Weber State College, 1966
M.S. Soils, Washington State University, 1969
Ph.D. Soils, Washington State University, 1971

Forest Service: 25 years

Assistant Team Leader, Tongass NF, (3 years)
Team Leader, Grit, Tongass NF, (4 years)
Acting District Ranger, Tongass NF, Yakutat District (1 year)
Zone Soil Scientist, Tongass NF, Juneau/Hoonah RD, Admiralty NM, (5 years)
Soil Scientist, Tongass NF, Juneau RD (5 years)
Acting Watershed Program Manager, Tongass NF, (1 year)
Alaska Pulp Team Leader, Tongass NF, (2 years)
Soil Scientist, Tongass NF, Chatham Area (4 years)

Other Relevant Employment

Research Scientist, Oregon State University (2 years)
Research Scientist, Purdue University (2 years)

Scott Godfrey, Forester

B.S. Natural Resources Management, Sheldon Jackson College, Sitka, Alaska, 1991
B.S. Fisheries Management, Sheldon Jackson College, Sitka, Alaska, 1991
Fisheries Certificate, 1991
Forest Engineering Institute, Oregon State University, 1994

Forest Service: 7 years

Presale Forester, Tongass NF, Sitka RD (7 years)

Barth Hamberg, Landscape Architect

B.S. Agricultural Economics, University of Vermont, 1980
M.S. Landscape Architecture, Harvard University, 1984

Forest Service: 15 years

Landscape Architect, Tongass NF, (15 years)

List of Preparers

Robert H. Huecker, Soil Scientist

B.S., Resource Management, University of Wisconsin-Stevens Point, 1976

Forest Service: 20 years

Soil Scientist, Tongass NF, (11 years)

District Soil Scientist, Tongass NF, Thorne Bay RD (3½ years)

Soil Scientist, Chugach NF (5½ years)

Other Relevant Employment:

Soil Conservationist, Dunn County Soil and Water Conservation District, Menomonie, Wisconsin (15 months)

Karen Iwamoto, Archeologist

B.A., Anthropology, Oregon State University, 1979

B.A., History, Oregon State University, 1979

Forest Service: 18 years

Forest Archeologist, Tongass NF, (6 years)

Archeologist, Tongass NF, (6 years)

Archeology Technician, Tongass NF (4 years)

Archeology Technician, Malheur NF (1 year)

Other Relevant Employment:

Archeology Technician, Burley District, BLM (1 year)

Independent Contractor, Archeology, Pacific NW and SE (2 years)

Daniel Kelliher, Hydrologist

B.S., Hydrology, University of New Hampshire, 1977

Forest Service: 20 years

Hydrologist, Tongass NF, (20 years)

Gregory M. Killinger, Fisheries Biologist

M.S., Fish and Wildlife Management, VPI, 1994

B.S., Wildlife Biology, Oregon State University, 1983

Forest Service: 15 years

Fish Biologist, Tongass NF, Sitka RD (10 years)

Biological Technician, Tongass NF, Sitka RD (3 years)

Biological Technician, Forestry Sciences Laboratory, Juneau (6 months)

Hydrological/Biological Technician, Tongass NF, (1 year)

Hydrological/Biological Volunteer, Tongass NF, (1 year)

John B. Morrell, Lands Forester

Master of Forest Resources, Outdoor Recreation Emphasis, University Of Washington, 1977

M.S., Forestry, California State University, Humboldt, 1974

B.S., University of Montana, 1967

Forest Service: 21 years

Lands Forester, Tongass NF, (13 years)

Resource Assistant, Tongass NF, Thorne Bay RD (2 years)

Resource Assistant, Tongass NF, North Prince of Wales RD (2 years)

Forester/Recreation Assistant, Packwood RD (4 years)

Research Assistant, Pacific Northwest Experimental Station, Seattle

Kathleen Morse, Economist

B.S., Natural Resource Economics, Montana State University

Graduate Study, Coastal Zone Management, University of Washington

Forest Service/Private Industry: 6 years

Rachel Myron, Archeologist

B.A. Archeology, The Colorado College, 1985

Graduate Study, Cultural Resource Management, University of Nevada, Reno, 1995

Forest Service: 9 years

District Archeologist, Tongass NF, Sitka RD (4 years)

Archeologist, Tongass NF, (2 years)

Archeological Technician, Tongass NF, (3 years)

Other Relevant Experience:

Museum Technician, Sitka National Historical Park (6 months)

Archeological Technician, Crow Canyon Arch. Center, Cortez, CO (6 months)

Mary Beth Nelson, Recreation Planner

B.S., Recreation Area Management, Montana State University, 1979

Graduate Study, Recreation Short-course, Utah State University, 1990

Graduate Study, Leadership and Communications, University of Idaho, 1994

Forest Service: 14 years

Recreation Planner, Tongass NF, (8 years)

Architectural Technician, Tongass NF (4 years)

Architectural Technician, Kootenai NF (2 years)

Greg R. Peterson, Logging Systems Specialist

B.S., Forest Management, Iowa State University, 1972

Forest Service: 13 years

Forester, Tongass NF, (6 years)

Construction Inspector, Fremont NF, Paisley RD (2 years)

Construction Inspector, Gifford Pinchot NF (2 years)

Presale Forestry Technician, Gifford Pinchot NF, Wind River RD (1 year)

Research Forester, PSW Forest and Range Experimental Station (2 years)

Other Relevant Employment

Washington State Department of Natural Resources (5 years)

Sealaska Corporation (1 year)

Alaska Pulp Corporation (3 years)

Kathy Peterson, Writer - Editor

B.A., History, Washington State University, 1971

Forest Service: 21 years

Writer- Editor, Tongass NF, (3 years)

Transportation Planner, Tongass NF, (9 years)

Civil Engineering Technician, Okanogan NF (9 years)

Michael Regan, Planning Forester

B.S., Forest Management, University of Tennessee, 1975

Forest Service: 17 years

Forester, Tongass NF, (17 years)

Chris Riley, Fisheries Biologist

B.S., Biochemistry, Oakland University, Rochester, Michigan

Graduate Course work, Biology and Wildlife Management, Montana State University

Forest Service: 10 years

Fisheries Biologist, Tongass NF, Hoonah RD (10 years)

List of Preparers

Kris Rutledge, Wildlife Biologist

B.S., Wildlife Biology, Oregon State University, 1988

Forest Service: 10 years

District Wildlife Biologist, Tongass NF, Hoonah RD (4 years)

Wildlife Biologist Trainee, Kisatchee NF, Winn RD (2 years)

Timber Sale Planning and Layout, Umatilla NF, Heppner RD (2 years)

Gerry Schauwecker, LTF Coordinator

B.S., Civil Engineering, Marquette University, 1964

Forest Service: 32 years

Permit Coordinator, Tongass NF, (5 years)

Construction Engineer, Tongass NF, (27 years)

Ted Schenck, Forest Wildlife Biologist

B.S. Wildlife Management, South Dakota State University, 1968

M.S. Wildlife Biology, South Dakota State University, 1972

Command and general Staff College, Ft. Leavenworth, KS. 1990

Forest Service: 14 years

Forest Wildlife Biologist, Tongass NF, (9 years)

Forest Wildlife Biologist, Pike and San Isabel NF (2 years)

Forest Wildlife Biologist, Black Hills NF (3 years)

Other Relevant Employment:

Asst. Regional Supervisor, Game Management, South Dakota Game, Fish and Parks (12 years)

Conservation Officer, South Dakota Game, Fish and Parks (2 years)

Instructor, State University of New York (2 years)

Michael E. Shephard, Ecologist

M.S., Botany (Field Naturalist Program), University of Vermont, Burlington, 1990

B.A., Geology, Whitman College, Walla Walla, Washington, 1986

Forest Service: 4 years

Ecologist, Tongass NF, (4 years)

Other Relevant Employment:

Vegetation Ecologist, Alaska Natural Heritage Program, University of Alaska, Anchorage (3 years)

Linn Shipley, Interdisciplinary Team Leader

Wildlife Society Certified Wildlife Biologist, 1989

B.A., Biology, Fresno State University, 1976

B.A., English Literature, Fresno State University, 1973

A.A., Liberal Arts, Allan Hancock Junior College, 1971

Forest Service: 20 years

Forest Wildlife Biologist, Tongass NF, (1 year)

Interdisciplinary Team Leader, Tongass NF, (3 years)

Acting Ketchikan District Ranger, Tongass NF, (8 months)

Deputy District Ranger, Tongass NF, (2 years)

Resource Officer, Tongass NF, (4 years)

Wildlife Biologist, Shasta-Trinity NF (7 years)

Range Technician, Los Padres NF (2 years)

Other Relevant Employment:

Biological Technician, National Marine Fisheries Service (2 years)

List of Preparers

Terry Suminski, Biological Sciences Technician (Fisheries)

B.S. Fisheries and Wildlife Management, Michigan State University, 1988

Forest Service: 13 years

Biological Sciences Technician, Tongass NF, Sitka RD (10 years)

Wildlife Biologist, Tongass NF, Sitka RD Planning Team (4 months)

Biological Sciences Technician (Wildlife), Chugach NF, Seward RD (4 months)

Biological Sciences Technician (Fisheries), Chugach NF, Cordova RD (8 months)

Fisheries and Wildlife Volunteer, Tongass NF, Sitka RD (2 seasons)

Sue Trull, Forest Ecologist

M.A., Plant Ecology, University of Montana, 1988

B.A., Biology, Carleton College, 1982

Forest Service: 6 years

Forest Ecologist, Tongass NF, (5 years)

Biological Technician, Tongass NF, Ketchikan Area (2 seasons)

Other relevant employment:

Ecologist, Horsely Witten Hegemann, Inc. (3 years)

Gene Virtue, Civil Engineering Tech

A.A., Forestry/Forest Engineering

Forest Service : 15 years

Civil Engineering Tech, Tongass NF (1 year)

Civil Engineering Tech, Klamath NF (14 years)

Arden Warm, Wildlife Biologist/Ecologist

B.S, Wildlife Management, University of Minnesota, 1988

Forest Service: 8 years

Zone Biologist, Custer NF, Sioux RD (1 year)

Wildlife Biologist/Ecologist, Tongass NF, Chatham Area (2½ years)

Biologist, Fremont NF, Silver Lake RD (1½ years)

Biologist, Fremont NF, Paisley RD (3 years)

Mike Weber, Land Management Planner

M.S. Wildlife Biology, South Dakota State University, 1978

B.S. Wildlife Conservation, University of Missouri, 1975

Forest Service: 21 years

Land Management Planner, Tongass NF (7 years)

Wildlife Biologist Planner, Tongass NF (2 years)

Wildlife Biologist, Ouachita NF (12 years)

Other Relevant Employment:

Wildlife Research Assistant, South Dakota State University (2 years)

Jake Winn, Soil Scientist/Ecologist

M.S., Wildland Resource Science, University of California, Berkeley, 1990

B.S., Agrarian Studies, University of California, Davis, 1987

Forest Service: 10 years

Soil Scientist/Ecologist, Tongass NF, Sitka RD (7 years)

Soil Scientist, Stanislaus NF, Mi-Wok RD (2 years)

Forestry Technician, Chugach NF, Cordova RD (½ year)

Soil Scientist, Plumas NF (½ year)

List of Preparers

Lisa Winn, Forester

B.S., Forest Management, University of California, Berkeley, 1990
Silviculture Institute XVII, 1994-1995
Certified Silviculturist, Region 10, 1996-Present

Forest Service: 10 years

Forester/Silviculturist, Tongass NF, Sitka RD (3 years)
Presale Forester, Tongass NF, Sitka RD (3 years)
Reforestation Forester, Stanislaus NF, Mi-Wok RD (4 years)

Other Assistance

Ellen Andrews, Volunteer
Julie Auger, Volunteer
Kent Barkau, Forester
Patrick Bower, Heritage Resources
Kathy Brown, Archeologist
Nida Crumley, GIS
Mary Dalton, Botany
Dave Ehaz, Volunteer
Sheila Jacobson, Fisheries Biologist
Sue Karl, Geologist, U.S. Geological Survey
Bradley Kriekhaus, Soils
Nels Lawson, Tribal Liaison Officer
Yael Martin, Forestry Technician
Phil Mooney, Biologist, Alaska Department of Fish and Game
Greg Nowacki, Regional Community Ecologist
Todd Parker, Volunteer
Nathalie Rice, GIS
Matt Seilor, Volunteer
Kathy Starostka, Writer-editor
Doug Stockdale, Public Affairs Specialist
Dave White, Volunteer

**List of Agencies,
Organizations, and Persons to
Whom Copies of This EIS
Were Sent**

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Individuals Receiving a Summary Copy of the Final EIS

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Darrell Chandler	Ken Montoure	Wendell Skaflestad
James F. Clark	Steve Nelson	Dick Stokes
Tina Dinzl-Pederson	Don Pegues	Marilyn T. Taylor
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Harold Fincher	William Peterson	Shirley Willett
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Ken Leghorn	Don Sautner	

Individuals Receiving a Complete Copy of the Final EIS

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Judy Brakel	Roger Lewis	Zeb Strong
Tuck Harry	Steve Lewis	Keith Walker
John & Theresa Howard	Dick Myren	
Heidi Lindgren	Joan McBean	

Agencies and Organizations Receiving a Summary Copy of the Final EIS

Grant Coutlee, AKs Natural Resource Supporters Assn
Dick Burley, Alaska Board of Fish, Chair
Larry Edfelt, Alaska Board of Fisheries Vice Chair
Larry J. Engel, Alaska Board of Fisheries Chair
Ernie Polley, Alaska Board of Game
Alaska Department of Fish & Game, Boards Support Section
Alaska Native Brotherhood, Tenakee Camp #76
Matthew Fred, Jr., President, Angoon Camp #7
Jack Lee, President, Alaska Native Brotherhood, Hoonah Camp #12
Walter A. Soboloff, Executive Committee, Alaska Native Brotherhood
John Feller, President, Alaska Native Brotherhood, Wrangell Camp #4
Marilyn Wilson, President, Alaska Native Sisterhood, Haines Camp #5
Marie Howard, President, Alaska Native Sisterhood, Hoonah Camp #12
Eileen Wagner, President, Alaska Native Sisterhood, Tenakee Camp #76
Ben Grussendorf Alaska State Representative
Robin Taylor Alaska State Senator
Marlene Zuboff, Angoon Community Association
AWRTA
Bud Johnson, Cape Fox Corporation
City of Hoonah
Albert Dick, City of Hoonah
City of Pelican
False Island-Kook Lake Council
Jim Brady, Glacier Bay National Park
Johanna Dybdahl, Hoonah Indian Association
Richard Dalton, Sr., Hoonah T&H Community Council
George Obert, Hoonah Traditional Tribal Council
Huna Totem Corporation
Jill Bennett, Ketchikan Pulp Company

List of Agencies, Organizations, and Persons to Whom Copies of This Statement Were Sent

Agencies and Organizations Receiving a Summary Copy of the Final EIS (cont.)

Kent P. Nicholson, Ketchikan Pulp Company
Gerry Engel, Kootznoowoo, Inc.
Mary Rudolph, SE Regional Advisory Council
William Thomas, Sr., SE Regional Advisory Council
Dolly Garza, SE Regional Advisory Council
Clarence Jackson, Sr., Sealaska Corporation
Mike Brown, Sealaska Timber
Sitka News Bureau
Daily Sitka Sentinel
Juneau Empire
Vicki LeCornu, Southeast Alaska Subsistence
John Martin, Sr., Teinaa Gey Tlingit Nation
Joel Nudleman, Tlingit-Haida Central Council
Nick Olmstead, Tongass Cave Project
Wally Frank, Sr., Tribal Council President
Don Young, U.S. Representative
Frank Murkowski, U.S. Senator
Ted Stevens, U.S. Senator
US Coast Guard, 17th District Office, Commanding Officer
US Coast Guard, Sitka Air Station, Commanding Officer
Kathy Veit, US Environmental Protection Agency

SE Native Subsistence Commission

Robert Paulo	Patrick Mills	Mike Lopez
Joe Hotch	Harold Martin, President	Herman Kitka
Marilyn Wilson	Dewey Skan, Jr.	George Ramos

Alaska Fish and Game Advisory Committees:

Gabriel George, Angoon Committee	Ann Lowe, SE Regional Council
Greg Howe, Elfin Cove Committee	Susie Sturm, Sitka Committee
Joe Hotch, Kluckwan Committee	Robert Wagner, Tenakee Springs Committee
Gordon Pederson, Icy Straits Committee	Herman Kitka, Sr., SE Regional Council
Pat Mills, Icy Straits Committee	John Vale, Yakutat Committee
Lonnie Anderson, Kake Committee	Brian Lemke, Upper Lynn Canal Committee
Laura and Scott Rideout, Port Alexander Committee	

Agencies and Organizations Receiving a Complete Copy of the Final EIS

Craig Public Library	Ketchikan Public Library
Douglas Public Library	Kettleson Memorial Library, Sitka
Elfin Cove Public Library	Mendenhall Valley Public Library, Juneau
Gustavus Public Library	Pelican Public Library
Haines Public Library	Petersburg Public Library
Hollis Public Library	Skagway Public Library
Hoonah Public Library	Sheldon Jackson College, Stratton Library, Sitka
Hyder Public Library	Tenakee Springs Public Library
Juneau Public Library	Thorne Bay Community Library
Kake Community Library	Wrangell Public Library
Kasaan Community Library	

List of Agencies, Organizations, and Persons to Whom Copies of This Statement Were Sent

Agencies and Organizations Receiving a Complete Copy of the Final EIS (cont.)

Judy Smith, Monograph Acquisition Service, Colorado State University Libraries
City of Angoon, Mayor
George Johnson, Jr., City of Angoon, ACMP Coordinator
City of Tenakee Springs
Louis Heins, City of Tenakee Springs, Mayor
Scott Brandt-Erichsen, Office of the Borough Attorney; Ketchikan Gateway Borough

Kenny Grant, Hoonah Indian Association, President
Troy Reinhart, Ketchikan Pulp Company, Employee Affairs & Public Relations
Frank Sharp, Kootznoowoo, Inc., President
June Christle, Logger's Legal Defense Fund
Southeast Alaska Conservation Council, Executive Director
Robert W. Loeschner, Sealaska Corporation, Resource Management
Tom Waldo, Earth Justice
John Talberth, Forest Guardians and FCC
Natural Resources Defense Council
Sitka Conservation Society
Berne Miller, Southeast Conference, Executive Director
Special Expeditions, Director of Environmental Affairs
Jack Phelps, Alaska Forest Association
Robert Dewey, Territorial Sportsmen, Inc.

AK Dept. of Commerce & Economic Development, Division of Economic Development
AK Dept. of Commerce & Economic Development, Office of the Commissioner
AK Dept. of Community & Regional Affairs, Office of the Commissioner
AK Dept. of Environmental Conservation, Office of the Commissioner
AK Dept. of Environmental Conservation, Public Information Office
AK Dept. of Environmental Conservation, SE Regional Office, Program Coordinator
Jim Ferguson, AK Dept. of Environmental Conservation, Division of Environmental Quality
James Clare, AK Dept. of Environmental Conservation, Sitka District Office
Len Verelli, AK Dept. of Environmental Conservation, Director, Air and Water Quality
AK Dept. of Fish & Game, Division of Sport Fish

AK Dept. of Fish & Game, Office of the Commissioner
Lana Shea Flanders, AK Dept. of Fish & Game, Division of Habitat
Bill Hanson, AK Dept. of Fish & Game, Division of Habitat
Ron Josephson, AK Dept. of Fish & Game, Division of Commercial Fish
Phil Mooney, AK Dept. of Fish & Game, Sitka Office, Habitat Division
Tom Paul, AK Dept. of Fish & Game, Division of Wildlife Conservation
Frank Rue, AK Dept. of Fish & Game, Habitat & Restoration
Bob Schroeder, AK Dept. of Fish & Game, Division of Subsistence
Kim Titus, AK Dept. of Fish & Game, Division of Wildlife Conservation
AK Dept. of Natural Resources, Division of Water

AK Dept. of Natural Resources, Division of Forestry
AK Dept. of Natural Resources, Division of Land
AK Dept. of Natural Resources, Division of Parks & Outdoor Rec
AK Dept. of Natural Resources, Office of the Commissioner
Judith Bittner, AK Dept. of Natural Resources, State Historic Preservation Officer
Andy Pekovich, AK Dept. of Natural Resources
Bill Ballard, AK Dept. of Transportation & PF
AK Office of Management & Budget, Div. of Governmental Coordination, Director
Lorraine Marshall, AK Office of Management & Budget, Div. of Governmental Coordination
Christine Valentine, AK Office of Management and Budget, Project Review Coordinator

List of Agencies, Organizations, and Persons to Whom Copies of This Statement Were Sent

Agencies and Organizations Receiving a Complete Copy of the Final EIS (cont.)

Patience Frederickson, AK State Library, Government Publications

Federal Energy Regulatory Commission, Advisor on Environmental Quality, WA, D.C.

US Advisory Council on Historic Preservation, Office of Program Review & Education, Washington D.C.

US Army Corps of Engineers, Headquarters

Terry Stone, US Army Corps of Engineers, Jordan Creek Center, Juneau, AK

US Army Corps of Engineers, Regulatory Branch

Valerie Payne, US Army Corps of Engineers, Regulatory Branch, Anchorage, AK

US Coast Guard, EI Branch, Marine Environment & Protection Division, Washington D.C.

Steve Zimmerman, US Department of Commerce, NOAA, National Marine Fisheries Service

US Department of Commerce, NOAA, Ecology & Conservation Office

US Department of Interior, Office of Environmental Affairs

US Department of Interior, Anchorage, AK

Paul Gates, US Department of Interior, Regional Environmental Officer, Anchorage, AK

US Environmental Protection Agency, Alaska Operations Office, Anchorage, AK

Chris Meade, US Environmental Protection Agency, Alaska Operations Office, Juneau, AK

US Environmental Protection Agency, EIS Review Coordinator, Region X, Seattle, WA

US Environmental Protection Agency, Office of Federal Activities, NEPA Compliance Div., Washington, D.C.

Mark Jen, US Environmental Protection Agency, Alaska Operations Office, Anchorage, AK

Steve Torok, US Environmental Protection Agency, Alaska Operations Office, Juneau, AK

US Fish & Wildlife Service, Subsistence Management Division, Anchorage, AK

US Fish & Wildlife Service, Field Supervisor, Juneau, AK

Susan Walker, US Fish & Wildlife Service, Fisheries Division, Juneau, AK

USDA Forest Service, Alaska Region, Public Affairs, Juneau, Alaska

USDA Forest Service, Alaska Region, Ecosystem Planning, & Budget, Juneau, Alaska

USDA Forest Service, Chugach National Forest, Anchorage, Alaska

USDA Forest Service, Information Center, Centennial Hall, Juneau, Alaska

USDA Forest Service, Tongass NF, Forest Supervisor's Offices in Ketchikan, Sitka, and Petersburg, Alaska

USDA Forest Service, Tongass NF, Admiralty National Monument, Juneau, Alaska

USDA Forest Service, Tongass NF, Craig Ranger District, Craig, Alaska

USDA Forest Service, Tongass NF, Hoonah Ranger District, Hoonah, Alaska

USDA Forest Service, Tongass NF, Juneau Ranger District, Juneau, Alaska

USDA Forest Service, Tongass NF, Ketchikan Ranger District/ Misty Fiords National Monument, Ketchikan, Alaska

USDA Forest Service, Tongass NF, Petersburg Ranger District, Petersburg, Alaska

USDA Forest Service, Tongass NF, Sitka Ranger District, Sitka, Alaska

USDA Forest Service, Tongass NF, Thorne Bay Ranger District, Thorne Bay, Alaska

USDA Forest Service, Tongass NF, Wrangell Ranger District, Wrangell, Alaska

USDA Forest Service, Tongass NF, Yakutat Ranger District, Yakutat, Alaska

Rhey Solomon, USDA Forest Service, Ecosystem Management Coordination, WA, D.C.

USDA National Agricultural Library, Acquisition & Serial Branch

USDA OPA Publications Stockroom

USDA Soil Conservation Service, Environmental Coordinator., Ecological Science Division

References Cited



References Cited

36 CFR, Part 290. Code of Federal Regulations, Part 290.

ACOE. 1987. *Corps of Engineers Wetlands Delineation Manual*. US Army Corps of Engineers. Technical Report Y-87-1, 100 pp. Washington: GPO.

Alaback, P.B. 1990. "Dynamics of Old-Growth Temperate Rainforest in Southeast Alaska." A.M. Milner and J. D. Wood, Jr., eds. In *Proceedings of the Second Glacier Bay Science Symposium*. USDI, National Park Service, Alaska Regional Office, Anchorage, AK. 150-153 pp.

Alaska Coastal Management Program Handbook. 1994. Compiled by Division of Governmental Coordination, Juneau, AK.

Alaska Department of Community and Regional Affairs. 1997. *FY 97 National Forest Receipts Program Borough Payments*. Report, Office of the Commissioner, Juneau, AK.

Alaska Department of Education 1997. Julie Watkins. *Personal Communication*. Alaska Department of Education, Juneau, AK.

Alaska Department of Environmental Conservation. 1989. Water Quality Standard Regulations 18 AAC 70. 18-2052 (Revised 12/89).

ADF&G. 1996. *1985-1995 Commercial Harvest in Tenakee Inlet/Freshwater Bay Fisheries*. Alaska Department of Fish and Game. Sitka, AK.

_____. 1995. *1994 Deer Hunter Survey Summary Statistics*. Alaska Department of Fish and Game, Division of Wildlife Conservation. Douglas, AK.

_____. 1995b. *1995 Commercial Fish Harvest and Escapement Records*. Commercial Fisheries Division, Region 1. Douglas, AK.

_____. 1994. *Subsistence Resource Use Patterns in Southeast Alaska: Summaries of Angoon, Hoonah, and Tenakee Springs*. Division of Wildlife Conservation, Douglas, AK.

_____. 1994b. *1993 Deer Hunter Survey Summary Statistics*. Division of Wildlife Conservation. Douglas, AK.

_____. 1993. *1992 Deer Hunter Survey Summary Statistics*. Division of Wildlife Conservation. Douglas, AK.

_____. 1992. *1991 Deer Hunter Survey Summary Statistics*. Division of Wildlife Conservation. Douglas, AK.

_____. 1991. *1990 Deer Hunter Survey Summary Statistics*. Alaska Department of Fish and Game, Division of Wildlife Conservation, Douglas, AK.

_____. 1990. *Fish and Wildlife Use Map Series for Southeast Alaska Communities, Vol. 1 and 2*. Division of Subsistence, Douglas, AK.

Alaska Department of Labor. 1992. *Population Projections, Alaska 1990-2010*. Alaska Department of Labor, Juneau, Alaska.

_____. 1996. *Alaska Economic Trends*. Technical Bulletin. Juneau, AK.

Alaska Marine Hwy. 1996. *Annual Traffic Volume Report*. Alaska Marine Highway System, State Department of Transportation and Public Facilities, Juneau, AK.

References Cited

- Alaska National Interest Lands Conservation Act of December 2, 1980 (ANILCA). Public Law 96-487, 96th Congress, H.R. 39, 94 Stat. 2371-2551.
- Alaska State Forest Practices Act. 1990. SCS CSHB 331 (Fin.) Chapter 34.
- Alaska Timber Task Force. 1985. *Log Transfer Facility Siting, Construction, Operation, and Monitoring/Reporting Guidelines*. Alaska Timber Task Force. October 1985.
- Autry, J.T. ed. 1993. *Draft Inventory Plan/Research Design*. USDA Forest Service, Alaska Region, Juneau, AK.
- Bailey, R.G. 1996. *Ecosystem Geography*. Springer, New York. 204 pp.
- Bald and Golden Eagle Protection Act. June 8, 1940. Public Law 76-567, Ch. 278, 54 Stat. 250, as amended; U.S. Code Title 16, Section 668.
- Boes, B. 1996. Dive Report in *Indian River Project Area Marine Resource Inventory Report*. J.E. Costa. Technical Report. USDA Forest Service, Sitka, AK.
- Brock, T. et al. In Preparation. G.J. Nowacki, and M.E. Shephard. *Ecological Subsections of Southeast Alaska*. Map and Descriptions. USDA Forest Service, Regional Office, Juneau, AK.
- Brooks, David J.; Haynes, Richard W. 1997. Timber products output and timber harvests in Alaska: projections for 1997-2010. Gen. Tech. Rep. PNW-GTR-409. Portland, OR: U.S. Department of Agriculture, Forest Service, PNW Research Station.
- Burris, O.E. and D.E. McKnight. 1973. *Game Transplants in Alaska*. Alaska Department of Fish and Game. Wildlife Technical Bulletin, 4. 57 pp.
- Clean Water Act. December 27, 1977. Public Law 95-217, 91 Stat. 1566; US Code 1982 Title 33, Sections 1251 et seq.
- Coastal Zone Management Act. July 25, 1976. Public Law 93-370, 90 Stat. 1013; US Code 1982 Title 16, Sections 1451 et seq.
- Code of Federal Regulations. Title 36. Parks, Forests, and Public Property. Chapter II, Part 290.
- _____. Title 40. Protection of Environment. Chapter V, Parts 1500-1508.
- _____. Title 36. Parks, Forests, and Public Property. Chapter VIII, Part 800.5.
- Costa, J.E. 1996. *Marine Resources Inventory Report - Indian River Project Area*. Resource Report. USDA Forest Service, Tongass NF, Chatham Area, Sitka, AK.
- Crocker-Bedford, D.C. 1990. "Goshawk Reproduction and Forest Management." In *Wildlife Society Bulletin*, 18(3):262-269.
- Daily Sitka Sentinel. August 15, 1997. "Wood Veneer Plant for Ketchikan Under Study."
- DeMeo, T. et al 1992. *Forest Plant Association Management Guide*, Ketchikan Area, Tongass National Forest. USDA Forest Service, Alaska Region. Juneau, AK. 405 pp. Doerr, J.D. 1995. Letter to files regarding 1995 pellet-group counts of Thomas Bay partial cut. Petersburg RD, Tongass NF.
- ECOMAP. 1993. *National Hierarchical Framework of Ecological Units*. USDA Forest Service, Washington, D.C. 21 pp.

- Endangered Species Act of 1973. December 28, 1973. Public Law 93-205, 87 Stat. 884, as amended; U.S. Code Title 16, Sections 1531-1536, 1538-1540.
- Faro, J. 1996. Personal communication.
- Farr, W.A. and J.S. Hard 1987. *Multivariate Analysis of Climate Along the Southern Coast of Alaska - Some Forestry Implications*. Research Paper. PNW-RP-372. Portland, OR. USDA Forest Service, Pacific Northwest Research Station. 38 pp.
- FCRPA. *Federal Cave Resources Protection Act of 1988*. Public Law 100-691.
- Federal Subsistence Board. 1996. *Subsistence Management Regulations for the Harvest of Fish and Wildlife on Federal Public Lands in Alaska*. Federal Subsistence Board, c/o U.S. Fish and Wildlife Service, Office of Subsistence Management, Anchorage, AK.
- Flynn, R.W. and L.H. Suring. 1993. *Harvest Rates of Sitka Black-tailed Deer Populations in Southeast Alaska for Land-use Planning*. Unpublished paper. ADF&G. Douglas, AK
- Garvey, T., W/ J. Fincher, A. Warm, P. Mooney, B. Ott. In prep. *Assessment of Wind as a Natural Disturbance Factor on Northeast Chichagof Island, Tongass National Forest, Chatham Area, Alaska*. USDA Forest Service, Juneau, AK.
- Geier, T.W. and W.D. Loggy. 1995. "A Proposed Geomorphic Risk Assessment of Potential Fish Habitat Impacts from Forest Management." In *Alaska Water Issues Proceedings*. American Water Resources Association, Alaska Section.
- General Bridge Act. August 2, 1946. c.753, 60 Stat. 812, Title 5; US Code 1982 Title 33, Section 525 et seq.
- Goldschmidt, W.R. and T.H. Haas. 1946. *Possessory Rights of the Natives of Southeastern Alaska*. A Report to the Commissioner of Indian Affairs.
- Guldin, J.M. 1996. "The Role of Uneven-Aged Silviculture in the Context of Ecosystem Management." In *Western Journal of Applied Forestry*.
- Haber, W. 1994. "System Ecological Concepts for Environmental Planning." In *Ecosystem Classification for Environmental Management*. F. Klijn (ed.), Kluwer Academic Publishers. Dordrecht, Netherlands. 293 pp.
- Harris, A.S. 1989. *Wind in the Forests of Southeast Alaska and Guides for Reducing Damage*. USDA Forest Service General Technical Report, PNW-244.
- Harza Northwest, Inc. 1996. *Karst Vulnerability Assessment Final Report. Indian River Project Area, Chichagof Island, Alaska*. A report for the USDA Forest Service. January 1996.
- Iwamoto, K. 1995. *Environmental Consequences for Heritage Resources, Indian River Project Area*. Resource Report. USDA Forest Service, Tongass NF, Chatham Area, Sitka, AK.
- Jones & Stokes Associates, Inc. 1991. *Southeast Alaska Sport Fishing Economics Study. Final Research Report*. December 1991 (JSA 88-028). Sacramento, CA. Prepared for Alaska Department of Fish and Game, Sport Fish Division, Research and Technical Services Section, Anchorage, Alaska.

References Cited

- Karl, S.M. 1995. *Preliminary Geologic Map of Northeast Chichagof Island*. United States Geological Survey, Anchorage, Alaska.
- Kiester, A.R. and C. Eckhardt. 1994. *Review of Wildlife Management of Conservation Biology and the Tongass National Forest: A Synthesis with Recommendations*. Pacific Northwest Research Station, USDA Forest Service, Corvallis, Oregon.
- Killinger, G.M. 1994. *Movement and Survival of Chinook Salmon Fry Stocked in a Stream with Natural Barriers to Anadromous Fish Migration*. Master's thesis. Virginia Polytechnic Institute and State University, Blacksburg, VA.
- _____. 1996. W/ J. Winn, D. Kelliher *Watershed and Aquatic Resource Effects Analysis for the Indian River Project Area*. Resource Report. USDA Forest Service, Tongass NF, Chatham Area, Sitka, AK.
- Knutson-Vandenburg Act. June 9, 1930. Chapter 416, 46 Stat. 527, as amended; US Code 1982 Title 16, sections 576-576b.
- Kruse, J. and R. Frazier. 1988. *Report to the Community of Tenakee Springs, Tongass Resource Use and Cooperative Survey*. Institute of Social and Economic Research, University of Alaska, Anchorage
- Kruse, J. 1993. *A Guide to 810 Analyses*. Draft. Institute of Social and Economic Research, University of Alaska, Anchorage, AK.
- Lewis, R. 1996. Personal communication.
- Malanson, G.P. 1993. *Riparian Landscapes*. University Press, Cambridge, U.K. 296p.
- Martin et al. 1995. J. R. Martin, S.J. Trull, W.W. Brady, R.A. West, and J.M. Downs. *Forest Plant Association Management Guide*. Chatham Area, Tongass National Forest. USDA Forest Service, Alaska Region. Juneau, AK.
- Mazour, L. 1995. W/ B. Hamberg, D. Monaco. In *Indian River Project Area, Visual Resources Inventory Report*. Resource Report. USDA Forest Service, Tongass NF, Chatham Area, Sitka, AK.
- McLellan, B. and D.M. Shackleton. 1988. *Grizzly Bears and Resource Extraction Industries: Effects of Roads on Behavior, Habitat Use and Demography*. Journal of Applied Ecology. 25:451-460.
- McNulty, Mike. 1997. "Ribbon Chop Opens Mill Project at Lewis Reef," in *Ketchikan Daily News*, August 21, 1997. 2 pp.
- Mitchell, R. 1995. *Preliminary Bridge Inventory, Indian River/Ten Mile*. Technical Report. USDA Forest Service, Tongass NF, Chatham Area, Sitka, AK.
- Mork, L. 1996. *Personal Communication*. USDA Forest Service, Tongass NF, Chatham Area, Sitka, AK.
- Morse, K. 1995. *Tongass National Forest - Independent Sale Program Market Assessment*. USDA, Forest Service, Region 10, Juneau, Alaska.
- Multiple-Use Sustained-Yield Act. June 12, 1969. Public Law 86-517, 74 Stat. 215; US Code 1982 Title 16, Sections 528 et seq.

- Myron, R., and P. Bower. 1996. W/ K. Iwamoto. *Environmental Consequences for Heritage Resources, Indian River Project Area*. Resource Report. USDA Forest Service, Tongass NF, Chatham Area, Sitka, AK.
- National Environmental Policy Act. January 1, 1970. Public Law 91-190, 83 Stat. 852; US Code 1982 Title 42, Sections 4321 et seq.
- National Historic Preservation Act. October 15, 1966. Public Law 89-665, 80. Stat 915; US Code 1982 Title 16, Sections 470 et seq.
- National Wetlands Working Group. 1988. *Wetlands of Canada*. Ecological Land Classification Series, No. 24. Sustainable Development Branch, Environment Canada, Ottawa, Ontario, and Polyscience Publications Inc., Montreal, Quebec.
- Nelson, M.B. 1996. *Indian River Project Area, Recreation Resource Inventory Report*. USDA Forest Service, Tongass NF, Chatham Area, Sitka, AK.
- Nelson, M.B. 1996. Indian River Recreation Planning Research: twenty-two personal interviews. USDA Forest Service, Tongass National Forest, Sitka, AK.
- Nelson, M.B. 1997. *Indian River Project Area, Recreation Effects Analysis Report*. USDA Forest Service, Tongass NF, Sitka, AK.
- NFMA. 1976. *National Forest Management Act of 1976*. Public Law 94-588.
- NMFS. 1996. Letter in response to a request for a list of threatened and endangered species that occur in the vicinity of the Indian River Project Area. Zimmerman, S. T. USDOC National Marine Fisheries Service, National Oceanic and Atmospheric Administration, Juneau, AK.
- Ott, R.A. 1995. *Small Scale Natural Disturbance and Its Influence on Vegetation Structure and Diversity in Temperate Rainforests of Southeast Alaska*. Report in Progress. USDA Forest Service PNW Research Station, Forest Sciences Laboratory, Juneau, AK.
- Paustian, S.J. et al. 1992. *Channel Type Users Guide*, Tongass National Forest. R10 Technical Paper 26, Juneau, AK, 179 pp.
- Paustian, S.J. et al. 1995. J. Winn, and C. Riley. *Road Drainage Structure Operation and Maintenance, Chichagof Island, Tongass National Forest, Chatham Area*. Technical Report, USDA Forest Service.
- Paustian, S.J et al. 1996. R.H. Huecker, D.F. Kelliher, G.M. Killinger, M.E. Shephard, and J.R. Winn. 1996. *Indian River Watershed Analysis (IRWA)*. A report for the Sitka Ranger District and Chatham Area, Tongass National Forest, Sitka, AK. January 1996.
- Regan, M. 1996. *Inventory Report for Timber and Silviculture - Indian River Project Area*. USDA Forest Service, Tongass NF, Chatham Area, Sitka, AK.
- Regan, M. 1997. W/ G. Peterson. *Effects Analysis for Timber and Silviculture - Indian River Project Area*. USDA Forest Service, Tongass NF, Chatham Area, Sitka, AK.
- Rivers and Harbors Act. March 3, 1899. c.425, 30 Stat. 1151 Section 9; US Code 1982 Title 33, Sections 401 et seq.
- Ruth, R.H. and A.S. Harris. 1979. *Management of Western Hemlock Sitka Spruce Forests for Timber Production*. General Technical Report PNW-88. Pacific Northwest Forest Range and Experiment Station. USDA Forest Service, Portland, OR.

References Cited

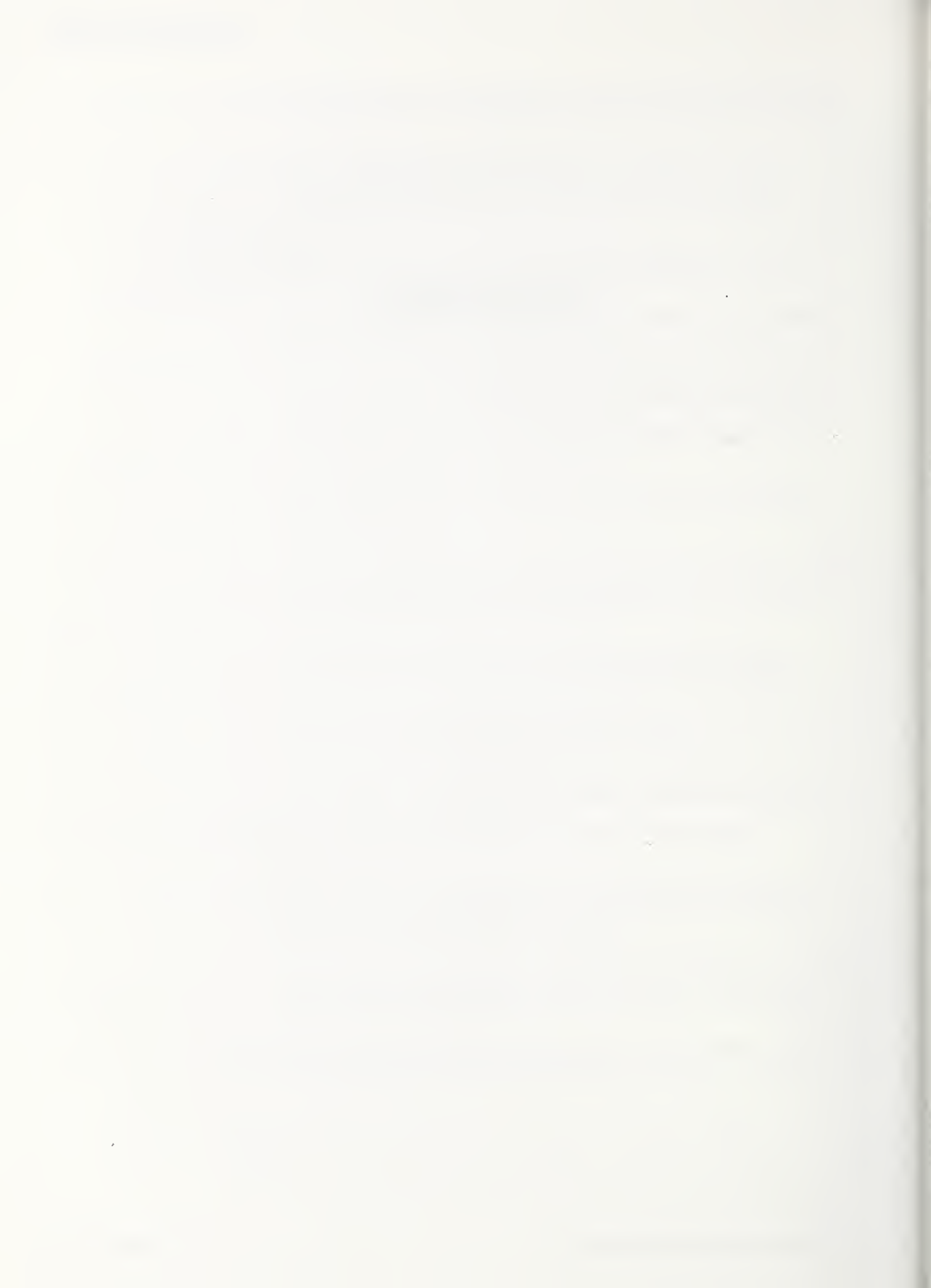
- SAF. 1994. *Silviculture Terminology*. Society of American Foresters, Silviculture Working Group Terminology Committee, Prof. C. Merritt. Chair.
- Schauwecker, G. 1996. *Personal Communication.*, USDA Forest Service, Tongass NF, Chatham Area, Sitka, AK.
- Schenck, T. 1996. *Subsistence Environmental Effects Analysis, Indian River Project*. Resource Report. USDA Forest Service, Tongass NF, Chatham Area, Sitka, AK.
- Shephard, M. Personal Observation. USDA Forest Service, Tongass NF, Chatham Area, Sitka, AK.
- Shipley, L. 1996. *Wildlife Resources Inventory Report - Indian River Project Area*. Resource Report. USDA Forest Service, Tongass NF, Chatham Area, Sitka, AK.
- Shipley, L. 1996a. *Biological Assessment and Biological Evaluation for Endangered, Threatened, Species of Concern, and Sensitive Vertebrate Species Which May Occur in the Indian River Timber Sale(s) Area*. USDA Forest Service, Tongass NF, Chatham Area, Sitka, AK.
- Sidle, W.B. and L.H. Suring 1986. *Management Indicator Species for National Forest Lands in Alaska*. Technical Report R10-TP-2. USDA Forest Service, Alaska Region, Juneau, AK.
- Stednick, J. D. 1981. *Precipitation and Stream Water Chemistry in an Undisturbed Watershed in Southeast Alaska*. Research Paper PNW-291, 8p. Pacific Northwest Forest Range and Experiment Station, Portland, OR.
- Suminski, T. 1996. *Wildlife Resources Inventory Report - Indian River Project Area*. Resource Report. USDA Forest Service, Tongass NF, Chatham Area, Sitka, AK.
- Suring L.H., W.B. Sidle, and J.I. Hodges, Jr. 1986. *The Bald Eagle in Southeast Alaska*. Technical Report R10-MB-9. USDA Forest Service, Tongass National Forest, Juneau, AK.
- Suring L.H. 1993 ed. *Habitat Capability Models for Wildlife in Southeast Alaska*. USDA Forest Service, Alaska Region, Juneau, AK.
- Suring, L.H. et al. 1993. *A Proposed Strategy for Maintaining Well-Distributed Viable Populations of Wildlife Associated with Old-Growth Forests in Southeast Alaska*. Report of an Interagency Committee. USDA Forest Service, Alaska Region, Juneau, AK.
- Swanston, D.N. and D.A. Marion. 1991. "Landslide Responses to Timber Harvest in Southeast Alaska." S.S. Lan and Y. Huang Kuo (eds). In *Proceedings of the Fifth Federal Interagency Sedimentation Conference*. p. 10-49 to 10-56. Las Vegas, NV. March 18-21, 1991.
- Taylor R.F. 1934. *Yield of Second-Growth Western Hemlock-Sitka Spruce Stands in Southeastern Alaska*. Technical Bulletin No. 412. USDA Forest Service, Washington, D.C.
- Tongass Timber Reform Act. 1990. Public Law 101-626. November 28, 1990.
- Trull, S., et al. 1997. *Indian River Project Area Vegetation Resource Effects Analysis*. USDA Forest Service, Tongass NF, Chatham Area, Sitka. AK.

- Trull, S. 1996. *Indian River Resource Report - Landscape Ecology and Vegetation*. Resource Report. USDA Forest Service, Tongass NF, Chatham Area, Sitka, AK.
- Trull, S. 1996a. *Biological Evaluation for Plants, Indian River Timber Sale Area*. USDA Forest Service, Tongass NF, Chatham Area, Sitka, AK.
- US Army Corps of Engineers (ACOE). 1987. *Corps of Engineers Wetlands Delineation Manual*. Technical Report Y-87-1, 100 pp. Washington: GPO.
- USDA Forest Service. 1999a. Memorandum: Acting Forest Supervisor James W. Bartleme to Tongass Assistant Forest Supervisors and District Rangers. Ref. 1920, May 11, 1999. *Implementation of Tongass Land Management Plan*. Supervisor's Office, Ketchikan, AK.
- USDA Forest Service. 1999; or USDA. 1999. Record of Decision – Tongass National Forest Land and Resource Management Plan. April, 1999. Washington, D.C. Doc. No. FS-639
- USDA Forest Service. 1998. Memorandum: Forest Supervisor Bradley E. Powell to Tongass Leadership Team. Ref. 1020, August 7, 1998. *Tongass Forest Plan Implementation Clarification Papers*. Supervisor's Office, Ketchikan, AK.
- USDA Forest Service. 1997. *Tongass Land and Resource Management Plan (1997 TLMP)*. Alaska Region, Juneau, AK. Doc. No. R10-MB-338dd.
- _____. 1997a. *Tongass Land Management Plan Revision-Final Environmental Impact Statement*. January, 1997, Juneau, AK. Doc. No. R10-MB-338b.
- _____. 1996. *Tongass Land Management Plan (TLMP). Revised Supplement to the DEIS*. Alaska Region, Juneau, AK.
- _____. 1996a. *Soil and Water Conservation Handbook*. Forest Service Handbook 2509.22. Department of Agriculture, Washington, D.C.
- _____. 1996b. *Timber Sale Preparation Handbook*. Forest Service Handbook 2409.18. Department of Agriculture, Washington D.C.
- _____. 1996c. Memorandum of Understanding Between the City of Tenakee Springs and the USDA Forest Service for the Short Term Use of Tenakee Springs Tidelands at Sunny Cove. USDA Forest Service, Alaska Region, Tongass NF, Juneau, AK.
- _____. 1996d. *Silviculture Information System. Database*. USDA Forest Service, Tongass NF, Chatham Area, Sitka, AK.
- _____. 1996e. *Timber Supply and Demand 1995*. Report to Congress. Region 10, Juneau, AK.
- _____. 1996f. *1995 Use Report Summaries for Outfitters and Guides*. Tongass National Forest, Admiralty National Monument. Region 10, Juneau, AK.
- _____. 1995. Report to Congress, *Anadromous Fish Habitat Assessment*. PNW Research Station and Alaska Region. R10-MB-279. Juneau, AK.
- _____. 1995b. *Timber Supply and Demand 1994*. Draft. Region 10, Juneau, AK.
- _____. 1995c. *Threatened, Endangered, Sensitive and Candidate Species*. Bulletin. Alaska Region, Juneau, AK.

References Cited

- _____. 1994. Memorandum of Understanding between the Hoonah Indian Association and the USDA Forest Service, Tongass NF, Chatham Area. Agreement No. 94-03-38.
- _____. 1992. Memorandum: Forest Service Chief F. Dale Robertson to Regional Foresters and Station Directors. Ref. 1330-1, June 4, 1992. *Ecosystem Management of the National Forests and Grasslands*. Washington Office, Washington, D.C.
- _____. 1991. *Tongass Land Management Plan Revision, Supplement to the Draft Environmental Impact Statement*. Alaska Region, Juneau, AK.
- _____. 1991a. *Sitka Ranger District Recreation Scoping Document*. Tongass National Forest, Sitka Ranger District. Sitka, AK.
- _____. 1990. *Analysis of the Management Situation: Tongass National Forest Land and Resource Management Plan Revision*. R10-MB-89. Alaska Region, Juneau, AK.
- _____. 1990a. *Recreation, Wilderness, and Related Resource Management*. Forest Service Alaska Region Manual 2300. Juneau, AK.
- _____. 1986. *Tongass Land Management Plan (TLMP)*. As Amended Alaska Region, Juneau, AK.
- _____. 1986a. Final Road Closure Order. USDA Forest Service, Tongass NF, Chatham Area.
- _____. 1983. *Alaska Regional Guide Environmental Impact Statement*. Alaska Region Report Number 126. Alaska Region, Juneau, AK.
- _____. 1982. (Working Draft) Forest Service Alaska Region Handbook 1909.12. *Recreation Input to Land and Resource Management Planning*. Juneau, AK.
- _____. 1979. *Tongass Land Management Plan-Final Environmental Impact Statement*. March, 1979, Juneau, AK. (Amended 1986, 1991, 1996.)
- _____. 1979a. *Species List of Alaskan Birds, Mammals, Fish, Amphibians, Reptiles, and Invertebrates*. T.F. Taylor, comp. Alaska Region, Report No. 82., Juneau, AK.
- USFWS. 1996. *National Wetlands Inventory*. USDI Fish and Wildlife Service, Washington, D.C.
- _____. 1996a. Letter in response to a request for a list of threatened and endangered species that occur in the vicinity of the Indian River Project Area. Thorson, R. USDI Fish and Wildlife Service, Anchorage, AK.
- _____. 1990. *Interagency Agreement between the USDI Fish and Wildlife Service, Alaska Region, and the USDA Forest Service, Alaska Region*. USDI Fish and Wildlife Service. Doc. No. 89-010
- Walker. 1995. "Conserving Biological Diversity Through Ecosystem Resilience." In *Conservation Biology*, Vol. 9, No. 4, p747-752.

Glossary



Glossary

Common Abbreviations

ACMP	Alaska Coastal Management Program
ADEC	Alaska Department of Environmental Conservation
ADF&G	Alaska Department of Fish and Game
ANCSA	Alaska Native Claims Settlement Act of 1971
ANILCA	Alaska National Interest Lands Conservation Act of 1980
APC	Alaska Pulp Company
ASQ	Allowable Sale Quantity
BMP	Best Management Practice
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
COE	Army Corps of Engineers
CZMA	Coastal Zone Management Act of 1976
dbh	Diameter at breast height
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
EVC	Existing Visual Condition
FSH	Forest Service Handbook
GIS	Geographic Information System
GMU	Game Management Unit
HCA	Habitat Conservation Area
HIA	Hoonah Indian Association
IDT	Interdisciplinary Team
IRWA	Indian River Watershed Analysis
LTF	Log Transfer Facility
LUD	Land Use Designation
LWD	Large Woody Debris
mbf	One thousand board feet
mmbf	One million board feet
MIS	Management Indicator Species
MOU	Memorandum of Understanding
NEPA	National Environmental Policy Act of 1969 (as amended)
NFMA	National Forest Management Act
NMFS	National Marine Fisheries Service
NOI	Notice of Intent
OGR	Old-growth Reserves
PFL	Productive Forest Land
RM	Roaded Modified
RMA	Riparian Management Area
RMO	Road Management Objectives
ROD	Record of Decision
ROS	Recreation Opportunity Spectrum
SAI	Sale Area Improvement
SIS	Silvicultural Information System
SHPO	State Historic Preservation Officer
SNAP	Scheduling and Network Analysis Program
SPM	Semi-Primitive Motorized
SPNM	Semi-Primitive Non-Motorized
SRD	Sitka Ranger District
SSA	Sediment Source Area
TLRMP	Tongass Land and Resource Management Plan

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Abbreviations

continued

TMS	Transportation Management System
TTRA	Tongass Timber Reform Act
TSZ	Transient Snow Zone
USDA	United States Department of Agriculture
USDI	United States Department of the Interior
USFWS	United States Fish and Wildlife Service
VCU	Value Comparison Unit
VMC	Visual Management Class
VQL	Visual Quality Level
VQO	Visual Quality Objective
WAA	Wildlife Analysis Area

Definitions

Abiotic

Non-living components of an ecosystem (for example, air, rocks, soil particles).

Adfluvial Fish

Species or populations of fish that do not go to sea, but live in lakes or ponds, and travel to streams to spawn.

Alaska National Interest Lands Conservation Act (ANILCA)

Passed by Congress in 1980. Public Law 96-487, 96th Congress, 94 Stat. 2371-2551.

Alaska Native Claims Settlement Act (ANCSA)

Approved December 18, 1971. Provides for the settlement of certain land claims of Alaska Natives and for other purposes. Public Law 92-203, 92nd Congress, 85 Stat. 688-716.

Alienated Lands

Non-National Forest System lands.

Allowable Sale Quantity (ASQ)

The maximum quantity of timber that may be sold each decade from suitable lands covered by the modified 1997 Forest Plan.

Alluvial Fan

A body of unconsolidated material (including gravel, sand, silt, and clay) deposited by running water, with or without debris flow deposits, whose surface forms a segment of a cone that radiates downslope from the point where the stream emerges from a narrow valley (or V-notch) onto a plain.

Alpine

Parts of mountains generally above tree growth, but may include small pockets of commercial timber.

Amenity Values

Resources that are pleasing to the mind or senses. Amenity uses or values cannot be easily measured in dollars. Recreation and scenic quality are examples of amenity values.

Anadromous Fish

Fish that spend part of their lives in fresh water and part of their lives in salt water. Anadromous fish include pink, chum, coho, sockeye, and king salmon, and steelhead trout. There are also anadromous Dolly Varden char.

Background

The distant part of a landscape. The seen, or viewed, area located from three or five miles to infinity from the viewer. (See Foreground and Middleground.)

Bark deposition

The settling out and accumulation of bark in the water, commonly referred to as a bark layer, and quantified in inches or centimeters. Usually associated with log transfer facilities.

Bark dispersion

The process of bark being scattered from the point of entry into the water and accumulation by the action of sea currents and tide fluctuations.

Beach Fringe Habitat

Habitat that occurs from the intertidal zone inland 500 feet, and islands of less than 50 acres.

Best Management Practice (BMP)

A practice or combination of practices that, after problem assessment, examination of alternative practices, and appropriate public participation is determined by a state to be the most effective and practicable means of preventing or reducing the amount of pollution generated by nonpoint sources to a level compatible with water quality goals. A BMP is an action-initiating mechanism which eventually leads to the interdisciplinary development of a site-specific prescription. BMPs are found in Forest Service Handbook 2509.22.

Biodiversity

(Also referred to as **Biological Diversity**.) The variety of life forms and processes, including the complexity of species, communities, gene pools, and ecological functions, within the area covered by a land management plan.

Biotic

Living components of an ecosystem (for example, plants and animals).

Board Foot

Timber measurement equal to the amount of wood in a 12-inch by 12-inch by 1-inch board.

Bog

Wetlands where peat accumulation has separated the peatland surface from ground water (e.g., domed bog). They receive their mineral supply solely from atmospheric precipitation (National Wetlands Working Group 1988).

Buffer

An area of undisturbed or lightly disturbed forest reserved to isolate activity areas from sensitive areas.

Cave

Legally defined under Federal law as "any naturally occurring void, cavity, recess, or system of interconnected passages which occurs beneath the surface of the earth or within a cliff or ledge and which is large enough to permit an individual to enter, whether or not the entrance is naturally formed or human-made. Such term shall include any natural pit, sinkhole or other feature which is an extension of the surface," (Federal Cave Resource Protection Act of 1988).

Characteristic Landscape

The naturally established landscape within a scene or scenes being viewed.

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Clearcut with Green Tree Retention

See Regeneration Methods.

Cohorts

In fisheries management, a group of fish from a given area that are the same age class and species.

Commercial Fishery

The taking or possession of fish, shellfish, or other fishery resources within a designated area for commercial purposes.

Commodity Values

Resources that have a dollar or market value. Timber and minerals are examples of commodity values.

Composition

The specific elements of an entity; for example, the species that constitute a plant community.

Conveyance

The passing of the title of a property from one owner to another.

Cretaceous

Geologic time period 135 million to 63 million years ago.

Cruise

The general activity of determining timber volume and quality.

Cubic Foot

Timber measurement equal to the amount of wood in a 12-inch by 12-inch by 12-inch cube capable of producing lumber.

Cumulative Effects

The impacts on the environment resulting from the addition of the incremental impacts of past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions. Cumulative effects can result from individually minor but collectively significant actions occurring over time.

Defer

To put off until a future time.

Devonian

Geologic time period 405 million to 345 million years ago.

Decumbent

Lying or growing along the ground, but erect at or near the flowers.

Direct Employment

Jobs that are immediately associated with timber sales, for example in logging, sawmills, and pulp mills.

Distance Zones

Areas of landscapes denoted by specified distances from the observer (See Foreground, Middleground, and Background). Used as a frame of reference in which to discuss landscape characteristics of management activities.

Ecological Approach

Natural resource planning and management activities that assure consideration of the relationship between all organisms (including humans) and their environment.

Ecosystem

A complete, interacting system of organisms considered together with their environment (for example, a marsh, a watershed, or a lake).

Ecosystem Management

The use of an ecological approach to land management to sustain diverse, healthy and productive ecosystems. Ecosystem management is applied at various scales to blend long-term societal and environmental values in a dynamic manner that may be modified through adaptive management.

Encumbrance

Any right or interest that affects value (e.g., mortgages, unpaid taxes, easements).

Endangered Species

Any species of animal or plant which is in danger of extinction throughout all or a significant portion of its range. Plant or animal species identified and defined in accordance with the 1973 Endangered Species Act and published in the Federal Register.

Environmental Impact Statement

A statement of environmental effects for a major Federal action prepared for release to the public and other agencies for comment and review prior to a final management decision, as required by Section 102 of the National Environmental Policy Act (NEPA). An impact statement includes the following points: (1) the environmental impact of the proposed action, (2) any adverse impacts which cannot be avoided by the action, (3) the alternative courses of actions, (4) the relationships between local short-term use of the human environment and the maintenance and enhancement of long-term productivity, and (5) a description of the irreversible and irretrievable commitment of resources which would occur if the action were accomplished.

Ephemeral Stream

A stream or portion of a stream which flows only in direct response to precipitation. It receives little or no water from springs and no long-continued supply from melting snow or other sources. Its channel is at all times above the water table. The term may be arbitrarily restricted to streams which do not flow continuously during periods of one month.

Epikarst

The surface of karst. Epikarst is an intensely dissolved veneer consisting of an intricate network of intersecting dissolution-widened fissures, cavities, and tubes. It is this network of intersecting fissures which collects and transports surface waters and nutrients vertically to the underlying karst conduits.

Erosion Processes

Processes which move earth or rock materials from one place to another, such as landslides and weathering.

Estuary

An ecological system at the mouth of a stream where fresh water and salt water mix, and where salt marshes and intertidal mudflats are present. The landward extent of an estuary is the limit of salt-intolerant vegetation, and the seaward extent is a stream's delta at mean low water.

Estuary Fringe Habitat

A 1,000-foot zone around an estuary.

Glossary

Even-Aged Management

The application of a combination of actions that result in the creation of stands in which trees of essentially the same age grow together. Clearcutting is an example of this type of management.

Even-aged System

A planned sequence of treatments designed to maintain and regenerate a stand with one age class. The range of tree ages is usually less than 20 percent of the rotation.

Existing Visual Condition (EVC)

The level of visual quality or condition presently occurring on the ground. The six existing visual condition categories are:

- **Type I:** Areas which appear to be untouched by human activities.
- **Type II:** Areas in which changes in the landscape are not noticed by the average person unless pointed out.
- **Type III:** Areas in which changes in the landscape are noticed by the average person but they do not attract attention. The natural appearance of the landscape still remains dominant.
- **Type IV:** Areas in which changes in the landscape are easily noticed by the average person and may attract some attention. Although the change in landscape is noticeable, it may resemble a natural disturbance.
- **Type V:** Areas in which changes in the landscape are obvious to the average person. These changes appear to be major disturbances.
- **Type VI:** Areas in which changes in the landscape are in glaring contrast to the natural landscape. The changes appear to be drastic disturbances.

Fen

A tract of low, wet ground containing sedge peat, relatively rich in mineral salts, alkaline in reaction, and characterized by slowly flowing water. Vegetation is generally sedges and greases, often with low shrubs and sometimes a sparse cover of trees. Sphagnum mosses are absent or of low cover. Unlike peatlands (commonly referred to as bogs or muskegs), fens contribute to stable stream flows, provide nutrient input to streams and often contribute to fish rearing habitat.

Fish Habitat

The combined aquatic environment and the immediately surrounding terrestrial environment that afford the necessary physical and biological support systems required by fish species during various life stages.

Flood Plain

The lowland and relatively flat areas joining inland and coastal waters, including debris cones and flood-prone areas of offshore islands; including at a minimum that area subject to a one percent (100-year recurrence) or greater chance of flooding in any given year.

Fluvial Processes

Processes driven by moving water, such as formation of floodplains, alluvial fans or deltas, and stream channel scour.

Forbs

A grouping/category of herbaceous plants which are not included in the grass, shrub or tree groupings/categories; generally smaller flowering plants.

Foreground

A term used in visual management to describe the stand of trees immediately adjacent to a scenic area, recreation facility or forest highway. The area is located less than 1/4 mile from the viewer. (See Background and Middleground.)

Forested Land

Land at least 10 percent occupied by forest trees of any size or formerly having had such tree cover and not currently developed for non-forest use.

Forested Habitat

All areas with tree cover. Used in this EIS to represent a general habitat zone.

FORPLAN

The forest planning model. A linear programming software package used to analyze planning decisions regarding land use patterns, capital investment, and timber harvest scheduling.

Function

Function is the flow of species, materials, and energy within ecosystems, across landscapes, and through time. Function includes a diversity of processes, such as succession, the biotic food chain, the hydrologic system, and nutrient cycling.

Geographic Information System (GIS)

A system of computer maps with corresponding site-specific information that can be electronically combined to provide reports and maps to support the decision making process.

Glacial Processes

Processes related to moving ice or glaciers. These processes include scraping away of soils and substrates, deposition of materials held in the ice (e.g., till or moraines), and formation of kettle lakes where ice chunks broke off, were buried, and later melted.

Glacial Till Deposit

Non-sorted, non-stratified sediment laid down by a glacier.

Group User Day

Two or more people engaged in a recreational activity for a day. "Day" is defined as a commercial business, cost per day.

Group Selection

See Regeneration Methods.

Harvesting Method (Cutting Method)

A method by which a stand is logged. Emphasis is on meeting logging requirements while concurrently attaining silvicultural objectives (see Regeneration Method).

Habitat Capability

The estimated maximum number of fish or wildlife that can be supported by the amount and distribution of suitable habitat in an area.

Habitat Conservation Area

See Old-growth habitat reserve.

Healthy Ecosystem

An ecosystem in which structure and functions allow the maintenance of biological diversity, biotic integrity, and ecological processes over time.

Heritage Resources

The physical remains of districts, sites, structures, buildings, networks, events, or objects used by humans in the past. They may be historic, prehistoric, architectural, or archival in nature. Heritage resources are non-renewable aspects of our national heritage.

Hierarchy

Reference to the observation that ecosystems occur in a nested arrangement, with smaller ecosystems found within larger ones. The hierarchy organizes the dominant ecological factors as well as the assemblages of plants, animals, and abiotic processes in an hierarchical relationship.

Home Range

A community's "Home Range" is defined as the area regularly accessed by typical day users from that community on an average day. In theory, this is the area which receives the most recreation use by the people of a specific town. This concept creates a radius of between 15 and 30 miles around communities wherein most recreation takes place. While there is no precise definition of "home range," 20 miles is the estimated furthest distance a person in a skiff could travel from and to a community in the daylight and still use a Recreation Place.

Indirect Employment

The jobs in service industries that are associated with timber sales, for example suppliers of logging and milling equipment.

Interdisciplinary Team (IDT)

A group of individuals with different training assembled to solve a problem or perform a task. The team is assembled out of recognition that no one scientific discipline is sufficiently broad to adequately solve the problem. Through interaction, participants bring different points of view and a broader range of expertise to bear on the problem.

Irretrievable Commitments

Applies to losses of production or use of renewable natural resources for a period of time. For example, timber production from an area is irretrievably lost during the time an area is allocated to a no-harvest prescription. If the allocation is changed to allow timber harvest, timber production can be resumed. The production lost is irretrievable, but the action is not irreversible.

Irreversible Commitments

Decisions causing changes which cannot be reversed. For example, if a roadless area is allocated to allow timber harvest and timber is actually harvested, that area cannot, at a later date, be allocated to Wilderness. Once harvested, the ability of that area to meet Wilderness criteria has been irreversibly lost. Often applies to nonrenewable resources such as minerals and cultural resources.

Isostatic Uplift

A general uplifting of land masses due to a rise in temperature. The weight of ice on the land mass is removed due to increased temperature. With this weight removed, the land rebounds or raises up.

Isostasy

The study of isostatic uplift.

Jurassic

Geologic time period 180 million to 135 million years ago.

Karst

Topography which develops as the result of the dissolution of soluble rocks, such as limestones and marbles. Dissolution of the subsurface strata produces a landscape that is characterized by well-developed subsurface drainage, collapse features such as sinkholes, dry valleys, vertical shafts, caves, and fluted rock surfaces (epikarst).

Karst Vulnerability Assessment

A management tool used to assess the susceptibility or sensitivity of the karst resources to any proposed land use. The thesis of this approach recognizes that not all karst development and associated resources are equal. Vulnerability mapping utilizes the fact that some parts of a karst landscape are more sensitive than others to planned land uses.

Knutsen-Vandenberg Act (KV)

This Act was passed by Congress in 1930 and amended in 1976 to provide for funding reforestation, resource protection, and improvement projects in timber sale areas. The KV Act allows for collecting funds as a portion of the stumpage fee paid by the purchaser. Examples of KV projects are stream bank stabilization, fish passage structures, and wildlife habitat improvement.

Land Use Designation (LUD)

(As used in the 1979 Tongass Land Management Plan) General management direction applied to a Value Comparison Unit or group of Value Comparison Units. These four land use designations are defined as follows.

- **LUD I:** Forest Service recommended Wilderness areas, most of which became Wilderness through the 1980 Alaska National Interest Lands Conservation Act. (ANILCA). In general, these undeveloped areas are managed for solitude and primitive types of recreation, and contain unaltered habitats for plants and animal species. These areas are managed as directed in the 1964 Wilderness Act and ANILCA, as amended.
- **LUD II:** Lands managed in a roadless state to retain their wildland character. Primitive recreational facilities can be built and habitat improvements for fish and wildlife are permitted. Timber harvest on these lands is limited to salvage operations to protect other resources.
- **LUD III:** Lands managed for a variety of uses. The emphasis is on managing for both amenity and commodity oriented uses in a compatible manner to provide the greatest combination of benefits. These areas usually have high amenity values in conjunction with high commodity values. Allowances in calculated potential timber yield have been made to meet multiple-use coordination objectives.
- **LUD IV:** Lands managed to provide opportunities for intensive development of resources. Emphasis is primarily on commodity, or market resources and their use. Amenity values are also provided for. When conflicts over competing resource uses arise, conflicts would most often be resolved in favor of commodity values. Allowances in calculated potential timber yield have been made to provide for protection of physical and biological productivity.

Land Use Designation (LUD)

(As used in the 1997 TLMP EIS and Modified 1997 Tongass Land and Resource Management Plan) A defined area of land specific to which management direction is applied.

Land Use Prescriptions

Specific management direction applied to a defined area of land (LUD as defined in the 1997 TLMP EIS and Modified 1997 Tongass Land and Resource Management Plan) to attain multiple use and other goals and objectives.

Landscape

An area composed of interacting and interconnected patterns of habitats (ecosystems), that are repeated because of the geology, land forms, soils, climate, biota and human influences throughout the area. Landscape structure is formed by patches (stands or sites), connections (corridors and linkages), and the matrix. Landscape function is based on disturbance events, successional development of landscape structure, and flows of energy and nutrients through the structure of the landscape. A landscape is composed of watersheds and smaller ecosystems.

Large Woody Debris (LWD)

Any large piece of relatively stable woody material having a diameter of greater than 10 centimeters and a length greater than one meter that intrudes into the stream channel.

Layout

Planning and mapping (using aerial photos) of harvest and road systems needed for timber harvest in a given area. Also can refer to the process of on-the-ground designation of roads and harvest units.

Log Transfer Facility (LTF)

Includes the site and structures used for moving logs and timber products from land-based transportation forms to water-based transportation forms (or vice versa). LTF siting and construction are regulated by the 1987 Amendments to the Clean Water Act. Formerly termed terminal transfer facility.

Logging Systems

- **Helicopter Logging.** This system consists of slinging logs underneath large helicopters and flying them (normally downhill) to the landing. Helicopters are typically used only in situations where road access is precluded or to accomplish non-clearcut harvest objectives.
- **Shovel Logging.** The process of moving logs from the stump to the landing by repeated swinging with a track-mounted swing boom loader. Logs are decked progressively closer to the road with each pass of the loader until they are finally decked at the roadside. This system is best used on well-drained sites with side slopes of less than 20 percent.
- **Skyline Logging.** Several cable systems used in Alaska and the Pacific Northwest are collectively called skyline systems. Among the types included in this category are live skyline (including gravity systems), slackline and running skyline. These systems generally allow for yarding distances of over 1,000 feet and keep one end or all of the log suspended above the ground for most or all of the yarding distance.

Management Area

Combinations of adjacent VCUs having common management direction, as defined in the 1979 Tongass Land Management Plan.

Matrix

The most extensive and connected landscape element that plays the dominant role in landscape functioning. Also, a landscape element surrounding a patch.

Maximum Disturbance Threshold (MDT)

The amount of disturbance (such as timber harvest) allowed in any given area in order to meet the intent of the Visual Quality Objective (VQO) for that area.

- **Maximum Disturbance Threshold (MDT) Retention:** no more than 8% of the area may be in a disturbed condition at any one time.
- **Partial Retention:** no more than 16% of the area may be in a disturbed condition at any one time.

- **Modification:** No more than 25% of the area may be in a disturbed condition at any one time.
- **Maximum Modification:** No more than 35% of the area may be in a disturbed condition at any one time .

Metamorphic rock

Rock which has been formed in response to changes in temperature, pressure, and temperature, which take place, in general, below the surface of the earth.

Microclimate

The temperature, moisture, wind, pressure, and evaporation (climate) of a very small area that differs from the general climate of the larger surrounding area.

Middleground

The visible terrain beyond the foreground where individual trees are still visible but do not stand out distinctly from the landscape. The area is located from 1/4 to 3-5 miles from the viewer. (See Foreground and Background.)

Mitigation

These measures include avoiding an impact by not taking a certain action or part of an action; minimizing an impact by limiting the degree or magnitude of an action and its implementation; rectifying the impact by repairing, rehabilitating, or restoring the affected environment; reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; or compensating for the impact by replacing or providing substitute resources or environments.

National Environmental Policy Act (NEPA)

Passed by Congress in 1969, an act declaring a National policy to encourage productive and enjoyable harmony between humans and their environment; to promote efforts that will prevent or eliminate damage to the environment and the biosphere and stimulate the health and welfare of humans; to enrich the understanding of the ecological systems and natural resources important to the nation; and to establish a Council on Environmental Quality. This act requires the preparation of environmental impact statements for Federal actions that are determined to be of major significance.

National Forest Management Act (NFMA)

A law passed in 1976 that amends the Forest and Rangeland Renewable Resources Planning Act and requires the preparation of Forest Plans.

Natural Variability

Variability in landscape/ecosystem composition, structure and function that has occurred through recent adaptive evolutionary time.

Nonforest Land

Land having less than ten percent tree cover. Land that has never supported forests and lands formerly forested but now developed for such nonforest uses as crops, improved pasture, etc.

Non-productive Forest Land

Forest land that does not produce or is incapable of producing more than twenty cubic feet per acre per year of industrial wood.

Old-Growth Forest

Ecosystems distinguished by the later stages of forest stand development that differs significantly from younger forests in structure, ecological function, and species composition. Old-growth forest is characterized by a patchy, multi-layered canopy; trees that represent many age classes; large trees that dominate the overstory, large standing dead (snags) or decadent trees; and higher accumulations of large down woody material. The structure and function of an old-growth ecosystem will be influenced by its stand size and landscape position and context. Also defined as timber stands over 150 years in age with an average volume of at least 8,000 board feet per acre.

Old-Growth Habitat Reserve.

A contiguous unit of old-growth forest habitat to be managed to maintain the integrity of the old-growth forest ecosystem. A system of large, medium, and small habitat reserves that are part of a landscape conservation strategy used to address National Forest Management Act requirements to maintain habitat to support viable wildlife populations well distributed across the Tongass National Forest. Also known as Habitat Conservation Areas (HCAs).

- **Large Reserves:** A landscape of at least 20,000 acres of productive old-growth forest, within a landscape of at least 40,000 acres. To address habitat quality, at least 50 percent (10,000 acres) of the old growth must be highly productive. To ensure interaction of species and dispersal between large reserves, they must be no more than 20 miles apart.
- **Medium Reserves:** A landscape of at least 5,000 acres of productive old growth of which at least 2,500 acres must be the highly productive component. Old growth must occur within a landscape of at least 10,000 acres. Medium reserves should be no less than 8 miles apart to facilitate dispersal and recolonization.
- **Small Reserves:** Provide at least one 800 acres block of productive old growth forest within an area of at least 1600 acres within each 10,000 acres landscape (e.g. 16 percent of each VCU).

Overstory

In a stand with several vegetative layers, the overstory is the uppermost layer usually formed by the tallest trees.

Overstory Removal

See Regeneration Methods.

Paleozoic

Geologic time era 600 million to 230 million years ago.

Palustrine

Nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean-derived salts is below 0.50 percent.

Patch

Ecosystem elements (such as areas of vegetation) that are relatively homogeneous internally and that differ from what surrounds them.

Patch Clearcuts for a percentage of a unit's volume

See Regeneration Methods.

Pattern

The spatial arrangement of landscape elements (patches, corridors, matrix) that determines the function of a landscape as an ecological system.

Plant Association

(a) A potential natural plant community of definite floristic composition and uniform appearance; (b) A basic unit of vegetation classification based on the climax plant community; a distinctive combination of vascular plants at climax; (c) Stands of vegetation with similar combinations of species united into abstract types; a basic unit in plant community classification; (d) An arbitrary grouping of plant communities into a type within environmental gradients and the distribution of populations along the gradients.

Plant Community

A unit of vegetation that is relatively uniform in structure and floristic composition and consists of competing plants of one or more species in a common location.

Plate tectonics

A branch of geology concerned with seismic activity and movement of continents, based on the theory that the earth's surface is composed of a small number of large, semi-rigid sections that float across the mantle.

Plucking Post

Snag or log routinely used as a perch by hawks and owls where prey is eaten. Scattered feathers give the appearance of "plucked" birds.

Pole/Young Sawtimber Stage

The stage following timber harvest, usually 26 to 150 years, when canopy closure decreases the amount of light that reaches the forest floor. This stage is associated with a rapid reduction in understory biomass.

Potential Yield

The maximum harvest that is possible given the optimum perpetual sustained-yield harvesting level attainable with intensive forestry on regulated areas and considering productivity of the land, conventional logging technology, standard silvicultural treatments, and relationships with other resource uses and the environment.

Precommercial Thinning

The practice of removing some of the trees of less than marketable size from a stand in order to achieve various management objectives.

Productive Forest Land

Forest land that produces or is capable of producing more than twenty cubic feet per acre per year of industrial wood.

Recreation Opportunity Spectrum (ROS)

A system for planning and managing recreation resources that categorizes recreation opportunities into seven classes. Each class is defined in terms of the degree to which it satisfies certain recreation experience needs based on the extent to which the natural environment has been modified, the type of facilities provided, the degree of outdoor skills needed to enjoy the area and the relative density of recreation use. The ROS classes are:

- **Primitive.** An unmodified environment generally greater than 5,000 acres in size and located generally at least 3 miles from all roads and other motorized travel routes. A very low interaction between users (generally less than 3 group encounters per day) results in a very high probability of experiencing solitude, freedom, closeness to nature, tranquillity, self-reliance, challenge, and risk. Evidence of other users is low. Restrictions and controls are not evident after entering the land unit. Motorized use is rare.

- **Semi-Primitive Non-Motorized.** A natural or natural-appearing environment generally greater than 2,500 acres in size and generally located at least 1/2 mile but not further than 3 miles from all roads and other motorized travel routes. Concentration of users is low (generally less than 10 group encounters per day), but there is often evidence of other users. There is a high probability of experiencing solitude, freedom, closeness to nature, tranquillity, self-reliance, challenge, and risk. There is a minimum of subtle on-site controls. No roads are present in the area.
- **Semi-Primitive Motorized.** A natural or natural-appearing environment generally greater than 2,500 acres in size and located within 1/2 mile of primitive roads and other motorized travel routes used by motor vehicles; but not closer than 1/2 mile from better-than-primitive roads and other motorized travel routes. Concentration of users is low (generally less than 10 group encounters per day), but there is often evidence of other users. Moderate probability of experiencing solitude, closeness to nature, and tranquillity, with a high degree of self-reliance, challenge and risk in using motorized equipment. Local roads may be present; along saltwater shorelines there may be extensive boat traffic.
- **Roaded Natural.** Resource modification and utilization are evident, in a predominantly natural-appearing environment generally occurring within 1/2 mile from better-than-primitive roads and other motorized travel routes. Interactions between users may be moderate to high (generally less than 20 group encounters per day), with evidence of other users prevalent. There is an opportunity to affiliate with other users in developed sites but with some chance for privacy. Self-reliance on outdoor skills is only of moderate importance with little opportunity for challenge and risk. Motorized use is allowed.
- **Roaded Modified.** Vegetative and landform alterations typically dominate the landscape. There is little on-site control of users except for gated roads. There is moderate evidence of other users on roads (generally less than 20 group encounters per day), and little evidence of others or interactions at campsites. There is opportunity to get away from others but with easy access. Some self-reliance is required in building campsites and use of motorized equipment. A feeling of independence and freedom exists with little challenge and risk. Recreation users will likely encounter timber management activities.
- **Rural.** The natural environment is substantially modified by land use activities. Opportunity to observe and affiliate with other users is important as is convenience of facilities. There is little opportunity for challenge and risk and self-reliance on outdoor skills is of little importance. Recreation facilities designed for group use are compatible. Users may have more than 20 group encounters per day.
- **Urban.** Urbanized environment with dominant structures, traffic lights and paved streets. May have natural appearing backdrop. Recreation places may be city parks and large resorts. Opportunity to observe and affiliate with other users is very important as is convenience of facilities and recreation opportunities. Interaction between large numbers of users is high. Outdoor skills, risk and challenge are unimportant except for competitive sports. Intensive on-site controls are numerous.

Recreation Place

An area that has natural characteristics which attract people. Examples of natural attractors are sandy beaches, anchorages, and freshwater. Recreation Places are represented on maps and in GIS as polygons. Each Recreation Place has recreation activities associated with it. Some examples of these activities are:

- viewing scenery/wildlife
- boating, hiking
- stream/saltwater/lake fishing
- dispersed camping
- big game hunting.

Recreation Site

A specific site and/or facility occurring within a Recreation Place (excluding anchorages which are not physically in a Recreation Place but are connected to the nearest one in the data base tables.) Recreation Sites are represented by points or stars on the maps in Appendix G. Some examples of Recreation Sites are:

- recreation cabins
- trail heads
- anchorages/mooring buoys

Regeneration (Reproduction) Methods

A cutting method by which new age class is created. For this project, the methods are Clearcutting with Green Tree Retention, Patch Clearcuts for a percent of a unit's volume, Overstory Removal, Group Selection, and Single Tree Selection (see Harvesting Methods). See Chapter 2 for a more detailed discussion of each method.

Even-aged Methods: Methods to regenerate a stand with a single age class:

- **Clearcutting with Green Tree Retention:** a method of regenerating an even-aged stand in which a new age class develops in an exposed microclimate after removing most of the trees in the stand in a single cutting. Retained trees are left to attain goals other than regeneration.
- **Overstory Removal:** The cutting of trees comprising an upper canopy layer in order to release trees or other vegetation in an understory.
- **Patch Clearcuts for a Percent of a Unit's Volume:** for this project, clearcuts generally less than 10 acres in size dispersed throughout the identified unit. The clearcuts remove, on a unit-specific basis, either 20, 35, or 50 percent of the unit's volume.

Uneven-aged (Selection) Methods: Methods of regenerating a forest stand, and maintaining an uneven-aged structure, by removing some trees in all size classes either singly or in small groups.

- **Group Selection:** a method of regenerating uneven-aged stands in which trees are removed, and new age classes are established, in small groups.
- **Single (Individual) Tree Selection:** a method of creating new age classes in uneven-aged stands in which individual trees of all size classes are removed more or less uniformly throughout the stand to achieve desired stand structural characteristics.

Resident Fish

Fish that reside in fresh water on a permanent basis. Resident fish include non-anadromous Dolly Varden char and cutthroat trout.

Resilience

The ability of an ecosystem to maintain diversity, integrity and ecological processes following disturbance.

Response Reach

A sensitive section of a stream which will reflect change in the upstream sediment budget (Paustian et al. 1996).

Restoration

The long-term placement of land back into its natural condition or state of productivity.

Rich Fen

An area of sedge peat accumulation, with slow internal drainage by seepage down gentle gradients. The soils are primarily organic (histosols) with one to two meters of sedge peat accumulated. The slow moving water is enriched by nutrients (especially calcium) from upslope materials such as limestone. The vegetation generally reflects the water quality and quantity, resulting in grass fens without trees or shrubs, shrub fens, and treed fens (National Wetlands Working Group 1988).

Riparian Area

The area including a stream channel, lake or estuary bed, the water itself, and the plants that grow in the water and on the land next to the water.

Riparian Management Area (RMA)

Land areas delineated in the Forest Plan (Tongass Land and Resource Management Plan, 1997 [modified, 1999]) to provide for the management of riparian resources. Specific standards and guidelines, by stream process group, are associated with riparian management areas. Riparian management areas may be modified by watershed analysis.

Road Management Objective (RMO)

Defines the intended purpose of an individual road based on management direction and access management objectives. Road Management objectives contain design, operation, and maintenance criteria. These are further defined as road functional class, road status, and road service life.

Road Functional Class - Arterial

A forest road that provides service to large land areas and usually connects with other arterial roads or public highways.

Road Functional Class - Collector

A forest road that serves smaller land areas than an arterial road and usually connects forest arterial roads to forest local roads or terminal facilities. Collector roads are usually long-term facilities.

Road Functional Class - Local

A forest road that connects terminal facilities with forest collector, forest arterial, or public highways. Usually forest local roads are single-purpose transportation facilities and can either be long or short term in nature.

Road Service Life - Long-term

A road developed and operated to provide either continuous access for long-term land management and resource utilization needs.

Road Service Life - Intermittent

A road developed and operated for periodic service and closed for more than one year between periods of use.

Road Service Life - Short-Term

A road developed and operated for a limited time period but which is likely to be extended during a future entry and which ceases to exist as a transportation facility after the purpose for which it was constructed is completed. Short-term roads are considered part of the Forest transportation network.

Road Status - Existing

Roads and facilities that are already part of the forest transportation system.

Road Status - Specified

Those forest development roads planned for future recurrent land management uses and for which the timber sale contract specifies the location, standards, and specifications. These relate to transportation facilities and appurtenances shown on the Sale Area Map and listed in the Timber Sale Contract.

Road Status - Temporary

Any short-lived road not intended to be a part of the forest development transportation system and not necessary for future resource management.

Roadless Inventory

This is a list of areas which meet the minimum criteria for potential inclusion in the National Wilderness System. Identifying this potential does not imply that areas should or should not be recommended for designation as Wilderness, but is intended to portray the remaining undeveloped portions of the National Forest for which Wilderness is a future option. To qualify, an area must contain at least 5,000 acres of undeveloped land that does not contain improved roads maintained for travel by passenger-type vehicles. However, areas less than 5,000 acres may qualify if they are a self-contained ecosystem such as an island, an area contiguous to existing Wilderness, or are ecologically isolated by topography, and manageable in a natural condition. This inventory was used for evaluating an area's capability and availability for Wilderness recommendation. This type of planning is done at the forest level.

Rotation

The planned number of years between the formation and regeneration of a crop or stand of trees and its final cutting at a specified stage of maturity.

Rotation Age

The age of a stand when harvested at the end of a rotation.

Second-Growth Forest

Forest growth that has regenerated naturally or has been planted after some drastic interference (for example, clearcut harvest, serious fire, or insect attack) with the previous forest growth.

Sediment Source Area (SSA)

Steep, highly dissected uplands that are primary source areas for sediment delivery to stream systems. Snow avalanching, mass wasting, V-notch sideslopes, and rill erosion are the dominant erosion processes.

Seedling/Sapling Stage

The stage following timber harvest when most colonizing tree and shrub seedlings become established (usually 1 to 25 years). Also referred to as the understory initiation stage.

Sensitivity Level

See Visual Sensitivity Level.

Silurian

Geologic time period 425 million to 405 million years ago.

Silviculture

Forest management practices that deal with the establishment, development, reproduction, and care of forest trees.

Single Tree Selection

See Regeneration Methods.

Slash

Debris left over after a logging operation, such as limbs, bark, and broken pieces of logs.

Soluble Rock

Rock that can be easily dissolved, such as limestone.

Special Interest Areas

These are areas possessing unique or unusual scenic, historic, prehistoric, scientific, natural, or other characteristics. The objective of designating and managing such areas is to protect their unique values and, where appropriate, to foster public use and enjoyment of these areas. These areas may be designated as scenic, recreational, historical, archaeological, geological, botanical, zoological or paleontological.

Species of Concern

Those species of plant or animal which are under consideration (by US Fish and Wildlife Service and National Marine Fisheries Service) for listing as threatened or endangered, but which are provided no statutory protection under the Endangered Species Act.

Stand

A contiguous group of trees sufficiently uniform in age class distribution, composition, and structure, and growing on a site of sufficiently uniform quality, to be a distinguishable unit.

Stand Structure

The horizontal and vertical distribution of forest stand components, including the height, diameter, crown layers and stems of trees, shrubs, herbaceous understory, snags, and down woody debris.

State Historic Preservation Officer (SHPO)

State-appointed official who administers Federal and State programs for cultural resources.

Strata

See Volume strata.

Stream Class

A means to categorize stream channels based on their fish production values. There are four stream classes on the Tongass National Forest:

- **Class I.** Streams and lakes with anadromous or adfluvial fish habitat; or high quality resident fish waters listed in Appendix 68.1, Region 10 Aquatic Habitat Management Handbook (FSH 2609.24), June 1986; or habitat above fish migration barriers known to be reasonable enhancement opportunities for anadromous fish.
- **Class II.** Streams and lakes with resident fish populations and generally steep (6-15 percent) gradient (can also include streams from 0-5 percent gradient), where no anadromous fish occur, and otherwise not meeting Class I criteria. These populations have limited fisheries values and generally occur upstream of migration barriers or have other habitat features that preclude anadromous fish use.
- **Class III.** Perennial and intermittent streams with no fish populations but which have sufficient flow or transport sufficient sediment and debris to have an immediate influence on downstream water quality of fish habitat capability. These streams generally have bankfull widths greater than 5 feet and are highly incised into the surrounding hillslope.
- **Class IV.** Intermittent, ephemeral, and small perennial channels with insufficient flow or sediment transport capabilities to have an immediate influence on downstream water quality or fish habitat capability. These streams generally are shallowly incised into the surrounding hillslope.
- **Non-streams.** Rills and other watercourses, generally intermittent and less than one foot in bankfull width, little or no incisement into the surrounding hillslope, and with little or no evidence of scour.

Sub-Basin

A small tributary watershed within a larger watershed.

Subsistence Use

The customary and traditional use by rural Alaskan residents of wild renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation; for the making and selling of handicraft articles out of non edible byproducts of fish and wildlife resources taken for personal or family consumption; for barter or sharing; for personal or family consumption; and for customary trade.

Successional Stage

One stage in a series of changes affecting the development of a biotic community. On its path to a climax stage, the community will pass through several stages of adaptation to environmental changes.

Sustainability

The ability of an ecosystem to maintain over time ecological processes and functions, biological diversity, and productivity.

Tectonic Processes (*see also Plate Tectonics*)

Processes which result in deformation of the earth's crust, such as folding, faulting, mountain building, and movement of blocks of rock. These processes influence the bedrock geology and the gross landforms present in an area.

Tentatively Suitable Forest Land

Forest land that is producing or is capable of producing crops of industrial wood and (a) has not been withdrawn by Congress, the Secretary of Agriculture or the Chief of the Forest Service; (b) existing technology and knowledge is available to ensure timber production without irreversible damage to soil productivity or watershed conditions; (c) existing technology and knowledge, as reflected in current research and experience, provides reasonable assurance that it is possible to restock adequately within 5 years after final harvest; and (d) adequate information is available to project responses to timber management activities.

Thousand Board Feet (mbf)

A method of timber measurement in which the unit is equivalent to 1,000 square feet of lumber one inch thick.

Threatened Species

A species of plant or animal which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. Threatened species are identified and defined in accordance with the 1973 Endangered Species Act and published in the Federal Register.

Timber Appraisal

Establishing the fair market value of timber by taking the selling value minus costs for manufacturing and transporting the logs from the stump to the manufacturer, and including an allowance for profit and risk.

Timber Entry

A term used to refer to how far into the timber rotation an area is on the basis of acreage harvested. For example, if an area is being managed for three entries over a 100-year rotation, the first entry would be completed when one-third (approximately 33 percent) of the available acreage is harvested (usually in 30-40 years); the second entry would be completed when two-thirds (approximately 66 percent) of the available acreage is harvested (usually 60-70 years); the third entry would be completed when all of the available acreage is harvested (at the end of the rotation).

Timtype

A source of data contained in the Forest Service Geographic Information System (GIS) database. The forest is mapped into areas/stands/polygons based on vegetation composition, stocking, and productivity characteristics that comprise a GIS data layer referred to as Timtype.

Tongass Land and Resource Management Plan (1997 TLRMP [modified, 1999])

The ten-year land allocation plan for the Tongass National Forest that directs and coordinates planning and the daily uses and activities carried out within the Forest. See also Land Use Designation.

Turbidity

A measure of suspended sediments.

Understory

Anything growing in a stratum definitely below the main crown canopy.

Understory-Initiation Stage

The stage following timber harvest when most of the colonizing tree and shrub seedlings become established, usually 1 to 25 years.

Uneven-Aged Management

The application of a combination of actions needed to simultaneously maintain continuous high-forest cover, recurring regeneration of desirable species, and the orderly growth and development of trees through a range of diameter or age classes to provide a sustained yield of forest products. Group and individual tree selection are examples of this type of management.

Uneven-aged System

A planned sequence of treatments designed to maintain and regenerate a stand with three or more age classes.

Value Comparison Unit (VCU)

First developed for the 1979 Tongass Land Management Plan as distinct geographic areas that generally encompass a drainage basin containing one or more large stream systems. Boundaries usually follow easily recognizable watershed divides. There are 926 units established to provide a common set of areas for which resource inventories could be conducted and resource value interpretations made.

Variety Class

Visual classification that determines those landscapes which are most important and those that are of lesser value from a standpoint of scenic quality. The classification is based on the premise that all landscapes have some value, but those with the most variety or diversity have the greatest potential for high scenic quality:

- **Class A - Distinctive:** Refers to those areas where features of landform, vegetative patterns, water forms, and rock formations are of unusual or outstanding visual quality.
- **Class B - Common:** Refers to those areas where features contain variety in form, line, color, and texture or combinations thereof but which tend to be common throughout the character type and are not outstanding in visual quality.
- **Class C - Minimal:** Refers to those areas whose features have little change in form, line, color, or texture. Includes all areas not found under Classes A and B.

Visual Management Class (VMC)

Management guidelines based on a synthesis of the Visual Quality Objectives and Visual Absorption Capability. Each of five VMCs describes a particular level of management objectives and the effort required to meet it.

Visual Priority Routes and Use Areas (VPRs)

Viewpoints from which scenery will be emphasized. Viewpoints are either “routes” or “use areas,” and are the viewpoints used to assess the existing visual condition of any given project area and to develop project designs that will be consistent with the adopted visual quality objectives for each land use designation.

Visual Quality Objective (VQO)

Measurable standards reflecting five different degrees of landscape alteration based upon a landscape's diversity of natural features and the public's concern for high scenic quality.

The five categories of VQOs are:

- **Preservation:** Permits ecological changes only. Applies to wilderness areas and other special classified areas.
- **Retention:** Provides for management activities that are not visually evident; requires reduction of contrast through mitigation measures either during or immediately after operation.
- **Partial Retention:** Management activities remain visually subordinate to the natural landscape. Mitigation measures should be accomplished within one year of project completion.
- **Modification:** Management activities may visually dominate the characteristics landscape. However activities must borrow from naturally established form line color and texture so that its visual characteristics resemble natural occurrences within the surrounding area when viewed in the middleground distance.
- **Maximum Modification:** Management activities may dominate the landscape. Mitigation measures should be accomplished with five years of project completion.

Visual Sensitivity Level

Sensitivity Levels are the measure of people's concern for the scenic quality of the National Forests. Sensitivity Levels are determined for land areas viewed by those who are traveling through the forest on developed roads and trails; using areas such as campgrounds and visitor centers; or recreating at lakes, streams, and other water bodies. Three Sensitivity Levels are employed, each identifying a different level of user concern for the visual environment:

- **Level 1** - Includes all seen areas from primary travel routes, use areas and water bodies where at least 3/4 of the forest visitors have a major concern for scenic qualities.
- **Level 2** - Includes all seen areas from primary travel routes, use areas and water bodies where fewer than 1/4 of the forest visitors have a major concern for scenic qualities.
- **Level 3** - Includes all seen areas from secondary travel routes, use areas and water bodies where less than 1/4 of the forest visitors have a major concern for scenic qualities.

Volume

Amount of wood in a stand of timber based on standing net board feet per acre by Scribner Rule.

Volume Strata

Divisions of old-growth timber volume derived from the interpreted timber type data layer (TIMTYP) and the common land unit data layer (CLU). Three volume strata (low, medium, and high) are recognized in the modified 1997 Forest Plan for each Administrative Area.

V-notch

A deeply incised valley along some waterways that would look like a “V” from a frontal view. These abrupt changes in terrain features are often used as harvest unit or yarding boundaries.

Watershed

The area that contributes water to a drainage or stream. Portion of the forest in which all surface water drains to a common point. Watersheds can range from tens of acres that drain a single small intermittent stream to many thousands of acres for a stream that drains hundreds of connected intermittent and perennial streams.

Watershed Analysis

A systematic procedure for characterizing and evaluating ecological processes within a watershed, for use in ecosystem management and project planning. A procedure for assessing important geomorphic processes and functions, and for describing key riparian, wetland, and aquatic habitat conditions and trends. Focuses interdisciplinary discussion on key watershed-level management issues, and provides a basis for integrating project designs. (See Appendix J in Modified 1997 TLRMP, for watershed analysis from an aquatic perspective.)

Wetlands

Areas that are inundated by surface or ground water with a frequency sufficient, under normal circumstances, to support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include peatlands, muskegs, marshes, bogs, sloughs, potholes, river overflows, mud flats, wet meadows, seeps, and springs.

Wild and Scenic Rivers Systems

Determination of eligibility is the result of a process used for forest planning which is described in the "Guidelines for Eligibility, Classification and Management of Wild and Scenic Rivers" (U.S. Department of Interior and U.S. Department of Agriculture, 1982). Determination of eligibility and suitability of rivers for the Wild and Scenic Rivers System is done at the forest planning level and is not within the scope of project level planning.

Wilderness

Areas designated by congressional action under the 1964 Wilderness Act or subsequent Acts. Wilderness is defined as undeveloped Federal land retaining its primeval character and influence without permanent improvements or human habitation. Wilderness areas are protected and managed to preserve their natural conditions, which generally appear to have been affected primarily by the forces of nature, with the imprint of human activity substantially unnoticeable; have outstanding opportunities for solitude or for a primitive and confined type of recreation; include at least 5,000 acres or are of sufficient size to make practical their preservation, enjoyment, and use in an unimpaired condition; and may contain features of scientific, educational, scenic, or historic value as well as ecologic and geologic interest. On the Tongass National Forest, Wilderness has been designated by ANILCA and the Tongass Timber Reform Act (TTRA).

Wildlife Analysis Area (WAA)

Alaska Department of Fish and Game administrative designation of an area that includes one or several Value Comparison Units (VCUs) for the purpose of wildlife analysis.

Wildlife Habitat

The locality where a species may be found and where the essentials for its development and sustained existence are obtained.

Wind Processes

Processes driven by prevailing or storm winds, such as wind snap of tree trunks, blowdown, and deformation of the typical tree crown shape to a flagged form, with most branches growing in the direction of the wind (e.g., krummholz trees at timberline).

Windthrows

Areas where trees are uprooted, blown down, or broken off by storm winds.

Comment Letters and Forest Service Response to Comments



Comment Letters and Forest Service Response to Comments

This section includes the written comments received on the Indian River Timber Sale(s) Draft EIS and testimony received at the ANILCA 810 Subsistence hearing and open house held in Tenakee Springs. Forest Service responses to substantive comments are also provided.

BACKGROUND. Availability of the Draft EIS was announced in the Federal Register on November 28, 1997, with a deadline of January 12, 1998 for public comment. The comment period was subsequently extended to January 20, 1998 to allow for additional public review and input. Copies of the Summary or Draft EIS were mailed to all individuals and organizations on a mailing list compiled by the Forest Service for this project. Notices of the availability of the Draft EIS and announcing the schedule for the subsistence hearing and public open house were placed in the *Juneau Empire* and *Daily Sitka Sentinel*. Additional notices were issued to radio, television, and newspapers in the region.

An ANILCA 810 Subsistence hearing and open house was held on January 13, 1998 in Tenakee Springs. An open house was held in conjunction with the subsistence hearing to describe the analysis process and answer public questions on the Draft EIS. Public comment on the Draft EIS was also accepted at that time.

Approximately 75 individuals, organizations, and agencies submitted written comments on the Draft EIS. In addition, public comments made during the ANILCA hearing and open house have been incorporated into the Final EIS. Responses to comments are presented in this section. The Final EIS has been filed with the Environmental Protection Agency and is available to the public.

Comment letters are published in full. Each letter has been assigned an identifying code (for example, USDOl for U.S. Department of the Interior), and are organized alphabetically by code. Substantive comments within each letter are numbered. Forest Service responses to comments are numbered correspondingly and are printed facing the comment letters. A transcript of the subsistence hearing is presented immediately following the comment letters.

The following index organizes the comment letters into two categories: agency/organization and individual(s).

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**Comment Letters and
Forest Service Response to Comments**

(Notes)

Box 20993
Juneau, AK 99802
January 12, 1998

Lynn Shipley, Team Leader
USDA Forest Service
Tongass National Forest, Chatham Area
204 Signaka Way
Sitka, AK 99835

RE: Indian River Timber Sale, DEIS

Dear Lynn:

The community of Tenakee Springs relies on Tenakee Inlet for commercial and sport fishing, subsistence and sport hunting, trapping, tourism and recreation. The scale of timber harvest allowed in the area should protect the values of the Inlet and community. The proposed sale is more timber than any local mills can process and contributes to exceeding the Forest Service's own estimate of market demand of timber over the next five years.

Please consider an alternative that:

- encourages smaller-scale selective logging,
- protects subsistence and sport use of deer in the area,
- builds no more permanent roads in the area,
- is designed to respond to the economic needs of Tenakee Springs,
- and fully protects all high vulnerability karst from logging and roadbuilding.

Thank you for your consideration.

Thank you for your work on this decision.

Sincerely,

Nancy Waterman
Nancy Waterman
William Spitzer
Bill Leighty
Wayne Leighty
Wayne Leighty

AAS-1

AAS-2

AAS-3

FS Response

AAS-1 Refer to Response TK-4.

AAS-2 Refer to Appendix A for additional information regarding market demand and mill processing capability.

AAS-3 Refer to the Other Issues section, Small Timber Sales portion of Chapter 1 of this project specific EIS.

Refer to Response RJE-1.

The alternatives provide a range of road construction, from no miles in the no action alternative, to 7.8 miles to 9.6 miles in the action alternatives.

Refer to the Community Effects - Tenakee Springs portion of the Economics and Social Values section in Chapter 4.

Refer to Response TCP-3.

Forest Supervisor
Tongass National Forest
Silver Ranger District Chatham Area
Indian River EIS

January 3, 1995

Re: Comments on the proposals for timber harvest in the Indian River drainage

We are property owners and part-time residents of Tenakee

One of our major concerns with renewed timber harvest in the Indian River drainage is the possibility of a road connection with the Hoonah/Game Creek road system. We are definitely against any road connection or of roads being close enough for recreational vehicles to make the connection. This is not a selfish motive but rather a desire to keep Tenakee Inlet as it is as much as possible and keeping access somewhat limited will help to retain the features of Tenakee Inlet that are desirable to us. While we personally do not use motorized vehicles for hunting activities, we would favor keeping whatever roads are constructed open to recreational use. Pulling culverts or similar methods seems senseless when multiple entry and multiple use are considered.

In the "Purpose and Needs" section, the need for this timber sale seems to become arguable. The number of alternatives also seems limited, and the elimination of certain alternatives because of refraining from opening up more log transfer sites rather than altering the alternatives seems questionable.

We understand the need for the planning process, but question if the government should be proposing harvesting public resources at a financial loss. This idea does not seem to be addressed in any of the planning documents. The harvest techniques proposed for this timber sale should be examined on a financial basis, and the sale should not be considered until market conditions and other considerations would produce a financially sensible result. The public needs to be informed of these aspects of a timber sale.

Finally, considering the ideas of local stewardship and collaborative planning, so that some tangible benefits might accrue to the community of Tenakee Springs, seems like a feasible direction that is not addressed in the "Planning Document." Perhaps some timber might be made available to the community or individuals, so that they could benefit from the forest that surrounds them rather than importing forest products from thousands of miles away.

Thank you
Art Bloom and Jo Gransten
PO Box 42
Tenakee Springs, AK 99841



FS Response

AB&JG-1 Refer to Response ADF&G-9.

Refer to the Road Management Objectives in Appendix D. Roads closed to motorized vehicle use will be available for non-motorized vehicle recreation use (hiking, biking, skiing, etc.).

Culverts are pulled only when necessary to prevent erosion and to physically close roads to motorized vehicles.

AB&JG-2 Refer to Response SEACC-8. Also, eliminating alternatives for the reasons stated in Chapter 2 of this EIS are valid.

AB&JG-3 Refer to Response TK-3. Also, refer to the Financial Efficiency Analysis of Timber Harvest portion in the Timber section in Chapter 4. Harvest costs are included in the mid-market analysis, which is performed prior to any timber being sold. Current market conditions will be one of the criteria considered when the time comes to sell timber from the Project Area. The EIS displays the best available cost information in the Timber and Transportation sections in Chapter 4.

AB&JG-4 Refer to Response AF-4. Also, we are familiar with the concept of collaborative stewardship; we are unfamiliar with the concepts associated with the terms "local stewardship" and "collaborative planning" as the persons commenting envision.

MEMORANDUM

STATE OF ALASKA DEPARTMENT OF FISH AND GAME HABITAT and RESTORATION DIVISION


TO: Jennifer Garland
Project Review Coordinator
Division of Governmental Coordination
Juneau

DATE: January 20, 1998

THRU: Bill Hanson
Management Coordinator
Habitat & Restoration Division
Douglas

FAX NO: 747-6239

PHONE NO: 747-2683

FROM: Phil Mooney 
Area Management Biologist
Habitat & Restoration Division
Sitka Office

SUBJECT: Indian River DEIS

The Alaska Department of Fish and Game (ADF&G) submits these comments for use in the consistency review of the U.S. Forest Services' (FS) Indian River Timber Sale Draft Environmental Impact Statement (DEIS). The ADF&G concludes that the DEIS is partially adequate, but lacks a significant amount of information necessary to demonstrate that the Indian River sale would comply with the Alaska Forest Resources and Practices Act (Act) and corresponding Regulations, which together constitute the ACMP standards for federal timber sales. The pertinent standards the ADF&G used to evaluate whether the Indian River DEIS demonstrated that the timber sale was consistent with the ACMP for the management of fish and wildlife resources is summarized, and reasons given why consistency was not demonstrated.

In summary, the ADF&G recommends the Indian River Timber Sale as proposed in the DEIS be found not consistent with the ACMP due to the lack of adequate protection for a regionally significant fish stream, the intrusion of a harvest unit (21010-C in VCU 2221) into an old growth reserve for important wildlife habitat on Ten Mile Creek, incomplete and inconsistent unit and road card information for: landing locations, detailed stream crossing plans and specifications, and an inconsistency between the Indian River Watershed Analysis and DEIS resource information related to sediment transport/unstable soils.

GENERAL COMMENTS

The Indian River Timber Sale is of particular interest to the department because of our participation in the Ecoteam project for Northeast Chichagof Island. One of the primary objectives of the Ecoteam was to use the Indian River Timber Sale area as a demonstration project for an ecologically-based, landscape scale timber harvest design utilizing rotation length planning.

The DEIS's statement in Chapter 1 regarding the collaborative stewardship with other agencies briefly mentions the department's participation in the Ecoteam project. Given the effort of both agencies in this project and the important goals that were mutually agreed upon, we believe further discussion is warranted.

ADF&G-1

Jennifer Garland
Indian River DEIS Comments

January 20, 1998

The Chatham Area Ecosystem Analysis Team (or Ecosystem) was formed in 1993 and was charged with bringing an ecological perspective into the timber planning process. This was to be done by developing ecologically-based analytical products and processes. With these products and processes, the goal of utilizing an ecological approach was to achieve productive resource management by blending social, physical, economic, and biological needs and values to provide healthy ecosystems rather than pit resources against one another. Resource management decisions were to be a view of the desired future condition that promoted sustained production over the long-run while maintaining all of the pieces of the ecosystems. A primary objective for this project was "to incorporate the ecosystem planning process resulting from the Indian River demonstration project in TLMP, with its application Forest-wide". Implementation of the procedures and techniques developed was to be applied in the Indian River/Kennel Creek timber project areas. Unfortunately, the Ecosystem project was unilaterally dropped by the FS and the team disbanded in January 1995, far short of achieving its goals and objectives.

ADF&G-1 (cont.)

During its tenure, the Ecosystem provided ecological, spatial and temporal analyses to the Interdisciplinary (IDT) and Ground Resources Inventory (GRI) teams conducting field work for the Indian River Timber Sale (see the Ecosystem Progress Report, 1994 and the Draft Final Ecosystem Project Report, 1995). More than fifty FS staff members at the district, Supervisor's and Regional Offices were involved to organize, compile, review and analyze data. The ADF&G provided staff and research assistance involving more than a dozen people. Other agency cooperators (University of Alaska - Fairbanks, Forestry Science Lab, and Region 10 State and Private Forestry) provided assistance and technical expertise. The Ecosystem work helped to generate the interest for the FS to conduct the Indian River watershed analysis; completed in 1998. Landscape fragmentation, connectivity, Habitat Conservation Area (HCA) placement and strategies, wind disturbance, and the woodpile assessment were items that the Ecosystem tried to get incorporated into field reviews as well as to the planning stage in developing a rotational timber harvest strategy. Yet with all of this multi-agency effort, key tenets of the team's work are not reflected or only addressed in out-of-context applications instead of in a comprehensive landscape strategy. Our comments related to this are more fully developed under the NEPA comments.

In August of 1995, the ADF&G participated in a field review of the unit pool that was being developed by the Indian River IDT in order to provide some linkage with the Ecosystem work. Key issues were the continuing fragmentation of the landscape and harvest "tactics" versus an overall landscape strategy (comments to the Indian River Timber Project Proposed Action, August 1995). These comments are still relevant to the unit pool and harvest tactics displayed in the DEIS.

The Indian River sale was scoped and laid out under, and most of the extensive field work conducted to document concurrence with, the old Tongass Land Management Plan (TLMP). It is now being reviewed under the 1997 TLMP. Some of the data collected are no longer applicable, and other field data would need to be collected to assure full compliance with the 1997 TLMP. An example of this is the need under the new TLMP to discern between Class III and Class IV streams. The incision and width measurements currently being used as criteria for this determination are not available in all instances for the Indian River sale area.

The field staff and specialists at the Sitka Ranger District have been cooperative and accommodating to our requests for additional information, to the extent such information is currently available. Extensive field work has been done on the project area's streams. The Indian River Watershed Analysis report, completed in 1996, is comprehensive. Although many of the units have received significant field review, there is poor linkage between resource reviews and recommendations and with the IRWA. Other portions of the project, such as road and stream crossing locations and structures are not displayed or discussed for detailed, site-specific review.

ADF&G-2

FS Response

ADF&G-1 Comment noted. The only addition we have is that the Ecosystem and GRIT were reorganized in 1995 due to shrinking budgets and shifting management priorities.

ADF&G-2 The Unit and Road Cards now include a requirement to have a fish biologist or hydrologist present during lay-out and road staking to distinguish between Class III and IV streams. Field guides and criteria based on channel width, incision depth, and stream power indicators will be used to distinguish between the two classes of streams. Unit layout will be modified as necessary.

ADF&G-3 The Soils, Water and Fish sections have been edited to improve the linkage between the resource reports, the Indian River Watershed Analysis, and the Final EIS.

Jennifer Garland
Indian River DEIS Comments

January 20, 1998

ADF&G-4

The only Old-growth reserve LUD map in the DEIS is of too small a scale to match up with the Alternatives maps.

ADF&G-5

The distinction between the Proposed Action and the Preferred Alternative is poorly covered, even in the DEIS summary. Even though it is mentioned in the abstract on the first page, the distinction should be identified and highlighted much earlier in the DEIS so that reviewers are aware of the difference. There is no discussion to lead the reviewer from what decisions were made to go from the Proposed Action to the Preferred Alternative.

ADF&G-6

The ADF&G is concerned that the FS has not yet fully implemented the commitments made in the 1997 Tongass Land Management Plan (TLMP) for cooperative stewardship between the FS and other state and federal agencies. An ACMP review of the 1997 TLMP has not been completed and it has not been shown to comply with the requirements of the state Act and Regulations. Therefore, merely stating that a timber sale (such as Indian River) complies with the 1997 TLMP does not assure that it is consistent with the ACMP. Category III issues also may remain, such as the final configuration of the upper Freshwater Creek. Small Old Growth Reserve and connectivity between the reserve and other natural setting land use designations (LUDs).

ACMP COMMENTS

UNIT CARDS

The applicable ACMP standards for harvest unit planning and design; landing location, construction, and operation; bank integrity; felling and bucking; cable yarding; tracked and wheeled harvest systems; and slash treatment are found in Article 4 of the Regulations (11 AAC 95.340—95.370). Information required in the detailed plan of operations is described in 11 AAC 95.220 (5), (6), (9), and (14).

Portions of the unit card information appear to be incomplete for the Indian River Timber Sale. While the map detail and scale are good, none of the unit cards show any locations of landings. The narratives for the unit cards are not linked well between resources in many cases. For example, of 80 units in the Preferred Alternative C unit pool, 46 have no wildlife field review, 7 have no timber field review, 21 have no transportation field review and one does not show a silviculture field review. While there are obviously some cross references between resource narratives (fisheries, ecology, hydrology, and silviculture are best discussed), it is disappointing to find a lack of specific field information for many of the resource reviews.

ADF&G-7

Proposed road building and timber harvest activities in VCU 2041 (upper Game Creek), the northern and middle sub-unit forks of S Fk Freshwater Creek (VCU 2160) and Ten Mile Creek (VCU 2221) remain a significant concern to the ADF&G. For a number of reasons it does not seem prudent to the ADF&G to enter portions of VCUs 2041, 2160 or 2221 in the manner displayed under the preferred alternative. The northern and middle sub-unit watersheds of the S. Fork of Freshwater Creek are virtually unfragmented. They are the only major watershed segments in the project area that have not been entered by previous timber harvest and road building. If these areas were deferred from harvest this entry, these two unlogged and unroaded watersheds would be valuable for effectiveness monitoring.

ADF&G-9

The proposed 7500 Road up the northern sub-unit fork and into the head of Game Creek in VCU 2041 results in only a 9/10ths of a mile unroaded section between the Indian River and Game Creek road systems. With the moderate topography of this saddle between the two drainages, the

FS Response

ADF&G-4 Old-growth LUDs have been added to the alternative maps.

ADF&G-5 Council on Environmental Quality regulations require us to identify a preferred alternative, if there is one; it may or may not be the same as the proposed action. The Draft EIS identified Alternative C as the Forest Service Preferred Alternative; Alternative B is the Proposed Action. The Selected Alternative will be described in the Record of Decision.

ADF&G-6 Cooperative stewardship commitments made in the modified 1997 Forest Plan are in the process of being implemented and will continue over time through many projects.

The 1999 TLRMP ROD (page 60) includes: "For timber harvest and associated road management, providing a level of resource protection no less than that provided by the Alaska Forest Practices and Resources Act ensures that activities are consistent, to the maximum extent practicable, with the Alaska Coastal Management Program." A crosswalk has been added to the Indian River planning record, comparing the Alaska Forest Practices and Resources Act with applicable Forest Service policy, direction, standards and guidelines, etc. to demonstrate that these resource protections are at least equal to that provided in State law. In addition, the Tongass Plan Implementation Team is addressing this issue. ADF&G is a member of the implementation team.

The 1997 TLRMP EIS identified the boundary and location of the Old-growth Habitat LUD in VCU 2160. This was a cooperative effort between the TLRMP planning team and Indian River Timber Sale(s) Project interdisciplinary team. Several potential Old-growth Habitat LUDs in the Northeast Chichagof Island area were considered, but the one identified best met the criteria for small habitat conservation areas.

Small Old-growth Habitat LUDs were identified, in part, "to provide temporary functional habitat for animals dispersing between large and medium reserves" (1999 ROD, page 52). They are part of the connectivity network to the non-development LUDs, along with stream, beach, and estuary buffers, and other areas off-limits to timber management activities. In addition, the alternative maps display old-growth forest areas remaining in the Project Area by alternative that provide connectivity.

FS Response

ADF&G-7 Unit and Road Cards provide summarized information on specific units and road sections to lay-out crews, road designers, and sale administrators; they were never intended to be the sole source of information and direction for them to follow. Additional information and direction, such as specific designs for landings, streamcourse protection plans, etc. are located in the unit and road folders. Specific designs will be developed for the selected alternative.

Although all resource specialists did not visit every unit, every unit was visited by someone on the interdisciplinary team. Team members are aware of the other resources' concerns; if a concern was identified, the specialist involved visited the unit to evaluate and make recommendations. During the unit design phase, the interdisciplinary team modified or eliminated many of the areas of concern. That is why the units are shaped like they are and why the unit cards say "No concern" in the narrative portion of the card. If the interdisciplinary team process could not eliminate the concern by avoiding it, the unit card contained additional information to be aware of or standards and guidelines to be implemented.

ADF&G-8 The Purpose and Need section of the Draft EIS stated that the modified 1997 Forest Plan allocated approximately 72.2 percent of the Project Area to the Timber Production LUD, 0.1 percent to the Modified Landscape LUD, and 27.7 percent to Old-growth Habitat LUD. The latter are part of the old-growth habitat conservation strategy that addressed, in part, fragmentation.

"Effectiveness monitoring and evaluation is used to determine whether standards and guidelines are achieving objectives, whether objectives are achieving goals, and includes an evaluation on whether there are significant changes in productivity of the land" (TLRMP, page 6-1). It is our understanding that this type of monitoring would serve as a baseline control. TLRMP identifies over 13 million acres (out of nearly 17 million acres) of non-development LUDs, much of it unlogged and unroaded, that could better serve monitoring needs. See TLRMP, Chapter 6 and Indian River EIS, Appendix C for additional information on monitoring.

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ADF&G-9
(cont.)

ADF&G-10

ADF&G-11

ADF&G-12

ADF&G-13

ADF&G-14

ADF&G-15

unroaded distance can be easily traversed by ATVs. This would have effects to sport hunting and use of the area by brown bear, deer, pine marten and other wildlife species as an unfragmented travel corridor. The Indian River road system has been used by Tenakee residents and others since the road was built. A variety of vehicles (small pickups, ATVs, motorcycles, and snowmachines) have been cached at one time or another in the rock pit near the Sunshine Cove LTF. Road gates that were installed on the road have not been used in any specific access management program, leaving the road open for vehicle traffic. Game Creek receives substantial vehicle traffic from Hoonah residents and others during certain times of the year. This road system has not been closed following timber harvest, as was specified in the Record of Decision.

The Indian River Watershed Analysis (IRWA) report (USDA 1996) noted that the S. Fork of Freshwater Creek had a total of 2009 acres of stream riparian zone. Previous timber harvest cut 177 acres (9%) of that area. This occurred primarily in the south sub-unit fork. Both the north and middle sub-unit forks remain virtually untouched. The IRWA report mentioned that,

"the most significant effects to fish habitat occurred along the FP4 (floodplain) and MM2 (moderate gradient) channel segments in the south fork of the creek. The loss of these streamside riparian trees will decrease future large woody debris input for many years. The existing healthy condition of the watersheds and associated aquatic resources will decline as existing instream woody debris and stumps along streambanks in the harvest areas decompose and are washed out of the system. Loss of large woody debris input will reduce bank stability, temperature moderation, overhanging bank cover, and input of leaf litter and terrestrial insects to the channel. All these effects along with increased sediment inputs can reduce both the amount and quality of fish rearing habitat. As dense second growth riparian vegetation matures, it shades the smaller stream channels, reducing solar radiation input and potentially lowering summer stream temperatures. This can reduce fish growth rates. The extensive area (54%) of the flood plain and alluvial fan landtype association that has been harvested to date in S Fk Freshwater leaves little opportunity for additional harvest within valley bottom riparian conservation areas" (see IRWA report, table 4-1).

Ten Mile Creek had 331 acres of old-growth forest harvested between 1983 - 1986. Of the total 785 acres of stream riparian zone in the watershed, 72 acres (9%) were cut. The IRWA concluded that prior timber harvest activities and the associated road building have destabilized several V-notches and alluvial fan tributary channels. Mass movement failures will likely deposit more sediment into the valley bottom channel, posing a threat to stream habitat even though the moderate gradient channel has a high sediment transport capability.

Ten Mile Creek itself is a relatively short system with a partial barrier of cascading falls that prevent pink and chum salmon from traveling upstream more than one mile. Coho salmon, Dolly Varden char, and cutthroat trout use most of the main channel habitat that is available in the system. The plunge pool below the barrier falls is used by brown bear as a fishing area for salmon. Field work conducted by the Ecoteam in 1983 and 1994, as well as fish surveys conducted by Sitka Ranger District biologists have documented the bear use. ADF&G brown bear research has also shown this particular area as a home range for a sow brown bear and her cubs over the years. While this stream is only considered to have low to moderate value spawning and rearing habitat, brown bears depend heavily upon returning adult salmon as a food resource in the late summer and fall. Additionally, the intrusion of a harvest unit (21010-C) is shown in the preferred alternative into an old growth reserve for important wildlife habitat on Ten Mile Creek

The salmon runs in Ten Mile Creek contribute a very important nutrient flow to the riparian and terrestrial wildlife functions of the watershed. As salmon carcasses are flushed downstream into the

FS Response

ADF&G-9 There is no intent to make the saddle between the 7500 and 8502 (Game Creek) roads traversible by ATVs or any other motorized vehicles. The Road Management Objectives (RMOs) in Appendix D for the preferred Alternative C include discouraging public/recreation use along the entire length of the 7500 road, and removing drainage structures and waterbarring that portion of the road in VCU 2041. The RMOs for the 8502 road include a gate on the last 0.16 mile of road, and removing drainage structures and waterbarring that portion of the road. If these measures fail to keep ATVs or other motorized vehicles from traversing the saddle, additional road blocks may be installed or bridges removed to prevent motorized vehicle access.

ADF&G-10 Comment noted.

ADF&G-11 The status of the gates on the 7500 road is discussed in the Road Management portion of the Chapter 3 Recreation section. The gate on the 8502 road will be installed, "following logging and post sale activities" (SEIS ROD, page 43). This should occur prior to construction of any of the Indian River roads.

ADF&G-12 Comment noted.

ADF&G-13 We also noted the existence of the 10-Mile Creek barrier falls during our evaluations for the need for additional protection (beyond the standards and guidelines and the old-growth habitat conservation strategy) of important brown bear foraging sites. During consultations with you and your agency, we recognized the site as a potential important site for additional protection. However, as you note here, the stream is only considered to have low to moderate value for salmon spawning and rearing habitat. You also note that the waterfalls plunge pool site is used by some brown bears and that it is the home range for a brown bear sow and her cubs. These characteristics, while relevant, do not qualify the site as an important brown bear foraging site where a large amount of bear feeding activity on salmon occurs.

ADF&G-14 Refer to response USDOL-21

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estuary and bay they provide nutrients for plant and animal species, including Dungeness crab. Due to the distances between salmon streams in this area of Tenakee Inlet, Ten Mile Creek has a particular significance in and adjacent to the project area.

The Ten Mile Creek watershed is the smallest in the project area and has the shortest main stem channel. The IRWA report found that this basin has the quickest response to storm runoff and is the most efficient in routing runoff to the mainstem channel. Geomorphic characteristics contribute to a higher unit area runoff than the other watersheds. This drainage also has the highest sediment hazard ratings. In the IRWA, an index called the Fish Habitat Hazard, Transfer Component (FHHsh), which combines transport efficiency and sediment production potential, gives the Ten Mile Creek watershed higher risk ratings than either Indian River or the S. Fk. of Freshwater Creek (see IRWA report, figure 3-11). The Alternative Maps and the unit cards for units 21310-H, 21420-H, 21410-H, 21511-H, 21610-H, 21520-H do not show unstable soils or slopes, yet Figure 3-12 (Transfer hazard and response reaches) and Figure 4-6 (Elements of cumulative effects analysis for Ten Mile watershed) in the IRWA both display this area as sediment source areas.

Indian River has had 12% of its riparian area harvested. The IRWA suggested that flexibility for future uneven-aged management may exist here. The size, shape, orientation of units, and the relationship to existing canopy openings will need to be carefully considered. The report also noted that stream buffers along foot slopes that are perpendicular to the main valley axis are particularly susceptible to windthrow.

An aerial survey conducted in July 1995 showed that blowdown has occurred in 60% of the past harvest units and several riparian buffer strips (nine of 18 units in Indian River, five of eight units in S Fk. Freshwater Creek, and in six of six units in Ten Mile Creek). It was noted in the IRWA, "the direction that the edge of a buffer strip faces does not always control whether the buffer will be prone to wind damage. The timber unit edges of both wind disturbed and undisturbed buffer strips faced in various directions". While resource specialists made brief comments at times on the unit cards, there isn't enough detail to conclude that windfirm buffers and feathered unit edges will be adequately incorporated. We believe that most of the unit cards should have the windfirm provisions shown on the unit card maps.

Therefore, the ADF&G recommends the State not concur with the FS that the unit cards for the Indian River Timber Sale are consistent with the ACPM to the maximum extent practicable. We recommend the following course of action:

- 1) Show landing locations on all unit cards where applicable.
- 2) Delete harvest unit 21010-C shown in the preferred alternative because it is within an old growth reserve for important wildlife habitat on Ten Mile Creek.
- 3) In VCU 2221, delete units 21410-H, 21511-C, 21520-H, and associated road building. The units are situated in sediment source areas and pose a risk to water quality and fish habitat.
- 4) In VCU 2160, delete units 61310-C, 61311-C, and associated road building. The units are situated in sediment source areas and pose a risk to water quality and fish habitat.

ADF&G-15 (cont.)

FS Response

ADF&G-15 The alternative maps display "Areas avoided due to unstable soils or slopes." These areas are not displayed on the Unit Cards because it would clutter the map with information that the ground crews do not need. This is due in large part because high risk areas have been avoided or the concerns have been mitigated by reducing harvest levels or using helicopters to reduce ground disturbance.

Harvest unit 21310-H is in a High Transfer Hazard reach. The Unit Card (Appendix J) displays an overstory removal for 50 percent of the volume in Alternative B and a patch clearcut for 35 percent of the volume in Alternative F. The reduced harvest levels and helicopter yarding displayed in both alternatives is intended to reduce risks to soil stability.

Harvest units 21420-H and 21410-H are in a High Transfer Hazard reach and Sediment Source Area. The Unit Cards display patch clearcuts for 20 percent of the volume in Alternative B and 35 percent of the volume in Alternatives C, D, and F. The reduced harvest levels and helicopter yarding displayed in both alternatives is intended to reduce risks to soil stability.

Harvest unit 21511-C/H includes portions of the High and Low Transfer Hazard reaches. The Unit Card displays a patch clearcut for 20 percent of the volume in Alternative B and clearcut with retention for 90 percent of the volume in Alternatives C, D, and F. Yarding methods include cable systems in Alternatives B, C, and D and helicopter in Alternative F. The interdisciplinary team determined that these harvest systems and harvest methods presented a low risk of failure to the soil resource.

Harvest unit 21610-H is in a Low Transfer Hazard reach and Sediment Source Area. The Unit Card displays single tree selection for 40 percent of the volume in Alternatives B, C, D, and F and 20 percent of the volume in Alternative E. The reduced harvest levels and helicopter yarding displayed in all of the alternatives is intended to reduce risks to soil stability.

Harvest unit 21520-H includes portions of the High and Low Transfer Hazard reaches. The Unit Card displays an overstory removal for 50 percent of the volume in Alternative B and clearcut with retention for 90 percent of the volume in Alternatives C, D, and F. Helicopter yarding in all of the alternatives is intended to reduce risks to soil stability.

ADF&G-16

ADF&G-16a

ADF&G-17

ADF&G-18

ADF&G-19

ADF&G-20

FS Response

ADF&G-16 Provisions for windfirm boundaries are displayed in the narrative portions of the Unit Cards. In most, if not all, cases, a fisheries biologist, hydrologist, or soil scientist will be present during lay-out to assist the crews in identifying windfirm boundaries.

ADF&G-16a Members of the Indian River Interdisciplinary Team met with Phil Mooney and Linda Perkins from the Sitka ADF&G office February 25-26, 1998 to review and discuss the Department's comments for the Draft EIS. Many of the Department's concerns were reduced or eliminated during the meetings. As a direct result of this meeting, the State concurred with the Forest Service determination of consistency in a letter dated March 24, 1998.

ADF&G-17 Draft landing locations were identified for the initial unit design phase in order to determine operability. Landing locations may change from design, to lay-out, to operation due to type of equipment used by the operator. Each type of equipment will have a different type of landing design in order to meet OSHA requirements. Final landing locations will be determined on-the-ground, taking into account the unit design, road location, type of equipment, and applicable OSHA requirements. In addition, windfirm boundaries will be prescribed during lay-out to provide necessary protection for streams.

ADF&G-18 Refer to response USDOI-21.

ADF&G-19 Refer to response ADF&G-15.

ADF&G-20 The interdisciplinary team determined that harvest units 61310-C and 61311-C are not in a Sediment Source Area. The units are actually situated on a footslope. All of the streams have buffers to reduce risks to soil stability.

- 5) In VCU's 2221 and 2160 there are discrepancies between the IRWA sediment source inventory and the information shown on alternative maps and unit cards (see 20610-H, 21420-H, 21610-H, 60710-H, 61020-H, 63850-H, and 65020-C). These need to be re-examined to have the differences resolved.
- 6) All Class III streams (as designated under the 1997 TLMP) shall receive, at a minimum, the measures described in the RIP2.III.F process group management directions. The ADF&G understands that these standards and guidelines allow for how "site-specific adjustments to Process group direction" can be made, but only after a watershed analysis has been completed, and "only if the objective of the process group can be met." Pursuant to 11 AAC 95.810, all distances used for compliance with the Act and Regulations "must be horizontal distance rather than slope distance."

ROAD CARDS

The applicable ACMP standards for road location, construction, drainage, bridges, culverts and other water crossing provisions, maintenance, closure, material and disposal sites, rehabilitation after mass wasting, and blasting are found in Article 3 of the Regulations (11 AAC 95.285—95.335). Information required in the detailed plan of operations is described in 11 AAC 95.220 (5), (7), (8), and (9).

Recommendations for design and maintenance of the road system to maintain riparian and wetland function, and fish habitat is discussed in the IRWA report, pages 115-119. Under the Cumulative Watershed Effects Risk Assessment (pages 199-127) road maintenance and restoration work is also recommended. ADF&G believes that these recommendations should be followed and implemented.

In Chapter 3, the Affected Environment discusses the Transportation System for the timber sale area. The DEIS states that "there are 23.2 miles of existing specified road and of which 20.4 miles are maintained at Maintenance Level 1 (allows the road to vegetate naturally while drainage is maintained to keep the road bed from eroding; drainage structures are either removed or kept open to allow cross drainage of the roadway). Maintenance Level 1 has not been achieved in the project area. The desired condition for the Land Use Designation TUS (Transportation and Utility System) that states that "effects on other resources have been recognized and resource protection has been provided" has certainly not been accomplished to date.

Although the road building began in 1979 and continued to 1986, inventory field work by the Ecoteam in 1993 documented road maintenance problems; ciling washouts, shotgun culverts, beaver impacted sites, fish passage barriers, collapsed log stringer bridges, and plugged culverts. While a good portion of the roadbed itself was in a relatively stable condition, it was apparent by the number and extent of damaged drainage structures and washouts that road maintenance work had not been done in years. Inventories conducted in 1994 and 1995 by the IRWA team re-confirmed the poor road maintenance condition (see IRWA report, page 87). A total of 240 drainage structures were inventoried and 62 involved either Class I or II streams. The report noted 13 washout sites, 9 structures impacted by beavers, and 11 that posed barriers to fish passage. In addition, the report notes improperly bedded culverts, a large pipe arch culvert placed in a perched condition near the mouth of a major tributary of Indian River with 400 meters of Class I habitat isolated by the complete barrier, a 48-inch diameter culvert placed near an active alluvial fan that plugged the culvert, and the lack of placing a drainage structure where the road crossed a small fish stream.

FS Response

ADF&G-21 Refer to the first paragraph in ADF&G-15.

Harvest unit 20610-H is not in a Sediment Source Area. The Unit Card displays an overstory removal for 80 percent of the volume in all action alternatives. The reduced harvest levels and helicopter yarding displayed in the alternatives is intended to reduce risks to soil stability.

Harvest units 21420-H and 21610-H, refer to ADF&F-15.

Harvest unit 60710-H is in a Sediment Source Area. The Unit Card displays group selections for 20 percent of the volume in Alternatives C, D, E, and F. The reduced harvest levels and helicopter yarding displayed in the alternatives is intended to reduce risks to soil stability.

Harvest unit 61020-H is below a Sediment Source Area. The Unit Card displays group selections for 20 percent of the volume in all action alternatives. The reduced harvest levels and helicopter yarding displayed in the alternatives is intended to reduce risks to soil stability.

Harvest unit 63850-H is in a Sediment Source Area. The Unit Card displays clearcut with retention for 95 percent of the volume in all action alternatives. Helicopter yarding is intended to reduce risks to soil stability.

Most of harvest unit 65020-C is below a Sediment Source Area (SSA); some of the upper portions of the unit may be in a SSA. The Unit Card displays clearcut with retention for 90 to 95 percent of the volume in Alternatives C, D, E, and F. With most, if not all, of the unit outside the SSA, the interdisciplinary team felt that the risk to soil stability is small, and recommended cable yarding.

ADF&G-22 Horizontal distance was measured for stream buffers. Notices of Instream Activity will be submitted to the State for review according to the Supplemental Memorandum of Understanding No. 1 Regarding Fish Habitat and Passage.

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ADF&G-24 (cont.)

The proposed Indian River road system construction and reconstruction does not display any site-specific engineering and design work, especially regarding stream crossings, at this stage of the project to allow for specific comments. For example, the IRWA mentions the need for bridge and culvert replacement noting that out of 31 bridges surveyed, 24 needed to be replaced. While the DEIS proposes that 24 bridges will be replaced and that the remaining 7 bridges will be replaced by culverts, none of the locations are shown or discussed.

The road and unit cards sometimes contain conflicting and incomplete information. There also seems to be problems reconciling some road locations with streams and contour lines in the GIS. The map scales between the unit and road cards are substantially different adding to the difficulty in matching up locations. The road cards have no narrative that discuss the number and type of stream crossings. There is a total lack of road card information on culverts (any diameter) and bridges. This may reflect a misinterpretation by the FS that the ADF&G has concurred with such a restriction in the negotiations toward a memorandum of understanding on Title 16 issues, which does not have any bearing on culvert and bridge requirements and standards under the Act or Regulations. More information is clearly needed before the ADF&G can find such the proposed roads consistent with the ACMP.

ADF&G-25

Because we do not have the necessary site-specific information on how important fish habitat could be maintained given proposed road building and timber harvest activities on steep slopes, in unstable areas, and in regionally important fish production streams, the ADF&G recommends the State not concur with the FS that the road cards and stream crossing location and designs for the Indian River Timber Sale are consistent with the ACMP to the maximum extent practicable.

NEPA COMMENTS

Stream Classifications

The ADF&G is very concerned by the current implementation criteria for determining whether a stream designated as Class III under the old TLMP is designated as a Class III or a Class IV stream under the 1997 TLMP. Forest-Wide Standard and Guideline FISH112.III.B contains the following criteria:

"3. Class III: Perennial and intermittent streams with no fish populations but which have sufficient flow, or transport sufficient sediment and debris, to have an immediate influence on downstream water quality or fish habitat capability. These streams generally have bankfull widths greater than 5 feet and are highly incised into the surrounding hillslope.

4. Class IV: Other intermittent, ephemeral, and small perennial channels with insufficient flow or sediment transport capabilities to have an immediate influence on downstream water quality or fish habitat capability. These streams generally are shallowly incised into the surrounding hillslope."

The distinction between these two stream classes is very important, because Class III streams receive process group based management direction under Forest-Wide Standard and Guideline RIP2, while Class IV streams do not. Instead they "will be treated as part of the hillside under slope stability standards and guidelines."

ADF&G-26

ADF&G-23 Achieving the various road Maintenance Levels is a long-term process that, for example, involves availability of funding to accomplish necessary maintenance, meeting local desires to keep roads open to vehicle use, and time for vegetation to naturally close the road to motorized vehicles.

The desired condition for the Transportation and Utility System LUD does not apply because it is a potential power transmission corridor and does not currently exist.

ADF&G-24 Site specific engineering and design work will be completed during the final road design. This work will include the Streamcourse Protection Plans for all fish stream and critical water quality stream crossings. These Plans are reviewed by the ADF&G.

ADF&G-25 Refer to response ADF&G-16a and ADF&G-24. The Fisheries narrative in the unit cards has been edited to address Class III and IV streams concerns.

On March 16, 1998 a Master Memorandum of Understanding (MOU) between the ADF&G and Forest Service defining a wildlife and fish conservation program on National Forest System lands and recognizing agency responsibilities and areas of cooperation and coordination was signed by the Regional Forester and the Commissioner of ADF&G. On the same date, a Supplemental MOU was also signed regarding fish habitat and passage, planning, and Title 16 concerns. This planning effort is in agreement with the Master and Supplemental MOUs.

ADF&G-26 Currently the Tongass NF does not have a rigid Class III/Class IV classification system. Regarding ADF&G concurrence with modified 1997 Forest Plan standards and guidelines, refer to ADF&G-16a.

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It is our understanding that FS field staff are currently being told that a stream must be both greater than five feet wide and incised at least 15 feet. We do not concur that this is what FISH-112.III.B intended, for two reasons. First, such a rigid classification disregards the term "generally," which is present in both the Class III and Class IV definitions. The punctuation in the Class III definition seems to indicate that "generally" is to be applied to both the width and incision depth criteria. Secondly, the Class III definition only states "deeply incised," and provides no basis for a 15 feet incision criterion. The Regulations provide that an incised channel have banks at least six feet above the water surface during normal flow (11 AAC 95.840 [38]), and various other criteria can be developed based on other sources.

Long-term Sustained Yield/Desired Condition

In Chapter 1, Purpose and Need, the DEIS states that for the Land Use Designation TM (Timber Production), "Suitable timber lands are managed for the production of sawtimber and other wood products on an even-flow, Long-term Sustained Yield basis; the timber yield produced contributes to a Forest-wide sustained yield".

The Woodpile Assessment of the Hoonah Portion of Northeast Chichagof (NECH) Island (January 1995) was an exercise undertaken by the Ecoream to display available timber volume. The work was initiated at the request of the Chatham Area Forest Supervisor in October of 1994 when he wanted to know if the team's data collection and compilation would tell him what timber volume was available in the project's analysis area.

A flow diagram was developed to accurately and graphically display the net NECH productive forest lands by ownership, acreage, and volume. Various alternative HCA management strategies were displayed and shown how they could affect the amount of timber volume that could be sustainably harvested per year under a long rotation (100 years). Currently we are dealing with Old-growth Habitat Land Use Designations (LUDs) instead of HCAs, but the impact to the net NECH productive forest lands is virtually unchanged. The woodpile assessment concept is unchanged, too. Yet Chapter 2 of the DEIS (Alternatives Including the Proposed Action) and Appendix A discuss reasons for scheduling the Indian River Project under harvest levels consistent with the 1997 TLMF, stocking standards, tentatively suitable land base, existing road infrastructure, number of LTFs sufficient to handle the timber volume, and the timber supply demand without a comprehensive landscape scale strategy to provide a sustainable and ecologically-based rotational timber harvest. The DEIS instead follows a traditional planning process that is not suited to incorporating an ecosystem approach even though the FS has the data and tools (particularly within these landscape analysis and project areas) to do so. Even if we look only at the suitable timber land component, we fail to see how a project level analysis that is not tiered into a landscape level analysis, can be tiered even further upwards into a Forest-wide level.

Fragmentation/Blowdown

The Landscape Look

The Ecoream identified approximately 23,000 acres (all ownerships) of timber harvest on Northeast Chichagof Island (NECH). The bulk of the harvest has occurred during the last 15 years and most of the acres are in the 0-800' elevation range. On a landscape level, the cutting is a disproportionate harvest in this segment of the vegetation resource. The problem is not a tactical one. The problem is a strategic one. The original pattern of timber harvest is orders of magnitude beyond the natural disturbance pattern. We believe that the current unit pool can be better designed to prevent aggravating the situation. We have included an analysis of the unit pool with comments and concerns noted. We would like to work with the planning team to develop this in more detail.

ADF&G-27 The Forest Service follows a two-step decision making process. The first step is the Forest Plan (See 1997 TLRMP). The second step is the project specific plan, such as the Indian River Timber Sale(s) Project. The latter may be tiered to the former. Other than the watershed analysis that looked at the Project Area, an intermediate, landscape level analysis for the Indian River project was never completed.

ADF&G-28 The 1997 TLRMP EIS and 1999 Record of Decision (ROD) addressed the issues of forest fragmentation and connectivity with the old-growth habitat strategy. See 1997 TLRMP Final EIS, Appendix N, and the 1999 ROD, page 52.

Members of the Indian River Interdisciplinary Team met with Phil Mooney and Linda Perkins on April 6, 1998 to review and discuss ADF&G's unit card/pool comments. As a result of this meeting, the unit cards have been clarified or re-written where necessary and appropriate. The suggested unit pool is, basically, another alternative. As such, it does not address any of the issues identified during the scoping process any better or differently than the alternatives presented in the Draft EIS. Potential impacts to residents of Tenakee Springs would be greatly increased due to the large number of timber harvest units in VCU 2200. We appreciate the time and effort that went into designing this unit pool; however, we would recommend that the Department and the Forest Service work closer together to develop alternatives, such as this, so that they can be evaluated in the Draft EIS process.

ADF&G-26
(cont.)

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Unit #	Acres	volume	%	mmbf	deletions	Comments/concerns	Connected
2810-C	14	288	90	259		Pull back E. edge	
2820-H	58	1283	90	1155		drop S. piece for 500' corridor 3000'	
3112-C	22	389	90	350		(hand plant)	
3221-C	33	941	90	847		drop S. corridor /windfirmness	
3222-C	47	1108	35	388		drop S. corridor/ windfirmness	
3520-H/C	31	613	90	552		borders with 3530-H/C	3530
3530-H/C	32	717	90	646		borders 3520-H/C	3520
3610-C	26	559	90	504	504	next to and across from previous	
4011-S	5	193	20	39	39	Wlf use/ blowdown/regeneration	4012
4012-H	12	343	20	69	69	Fish /blowdown/regen problems	4011
4120-H	59	1073	90	965		high elevation	
20510-H	17	268	90	241		n/c	
20610-H	14	237	80	190	190	parallel to fish/existing cut /windfirm	
20710-C	11	86	50	43	43	small unit between existing cut	
20810-H	22	351	70	246		n/c	20812
20812-H	5	84	70	59		n/c	20810
20910-H	8.5	112	50	56	56	parallel fish directly across from 20810	
21010-C	16	466	90	419	419	Within HCA	
21410-H	25	727	35	254	254	Bear buffer / unit under 700'	21420
21420-H	25	723	35	253		bear buffer?/ partial 800' elevation	21410
21511-C	18	509	90	458	458	bear buffer/ unit under 600'	21520
21520-H	23	679	90	611	611	Wlf use/ blowdown cordr /1/2 is under	21511
21610-H	28	771	40	308		Wlf use/ windthrw/ fish streams/ existing	
21820-C	39	1028	90	925	925	unit <800'	21830-
21830-H	23	534	90	481		n/c	28120-
21840-H	43	1168	90	1003		n/c	21830-
21910-H	12	211	90	190	190	<800' fish stream buffers surrounding	22010
22010-H	26	458	50	229		n/c	21910
22110-H	14	259	40	103	103	Wlf use/ fish stream	22130

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Unit #	Acres	volume	%	mmbf	deletions	Comments/concerns	Connected
22120-H	26	543	40	217		n/c	22140
22130-H	20	374	90	337	337	Wlf use	22110
22140-H	57	1049	40	420		remove west portion/ windfirmness	22120
22210-H	22	438	90	394	197	remove west piece/ fish stream	
22230-H	4	78	90	70	70	between 2 fish crks	
60420-C	31	1023	90	921	921	Wlf use/ eliminate linear layout	
60710-H	59	1235	20	247		drop east section/ goshawk site within	
60810-H	5	127	90	114		n/c	
60910-H	10	84	90	75		n/c	
61011-H	18	413	40	165	165	low elev. fragmentation	61040
61012-H	10	182	40	73		n/c	
61020-H	28	491	20	98	50	remove west edge/ windfirm/fish buffer	61030
61030-C	35	810	90	729	300	remove east lower portion/ fish streams	61020
61040-H	9	156	70	109	109	Wlf use/ windfirmness	61011
61310-C	11/8	170	90	153		map/card differ in acres	61311
61311-C	2	30	90	27		n/c	61310
61410-S	25	619	90	503	300	drop 2 on west/ linear / drainages	
61510-S	30	770	90	693	693	no road corridor through 60420-c	
62610-C	34	663	80	597		change to helicopter (no road)	62611
62611-S	20	722	90	649	505	S. slope 20% w/heli (144mbf) above	62610/20
62620-S	11	412	20	82		temp road	62611
62630-S	15	582	20	116		temp road	62640
62640-C	9	334	90	301	234	20% w/heli (67mbf) temp road	62630
62650-C	45	908	90	817	635	20% heli (182mbf) drop S. portion	
62710-C	21	533	90	479	372	20% heli S slope /wind factor (107mbf)	
62730-C	12	202	90	182	142	20% heli (40mbf)	
62810-C	31	559	90	503	391	20% heli (112mbf)	
62820-C	14	259	40	103	51	20% heli (52mbf)	

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Unit #	Acres	volume	%	mmbf	deletions	Comments/concerns	Connected
62840-C	5	100	90	90	70	20% heli (20mbf)	
62850-C	20	357	40	143	71	20% heli (72mbf)	
62860-	14	250	90	225	175	20% heli (50mbf)	
63110-S	16	288	90	259	201	20% svi (58mbf) remove small east part	
63120-H	10	187	80	149	74	40% heli (75mbf)	
63510-C	19	341	90	307		change to heli 90%/ sensitive plants/no	
63520-C	6	136	50	68	68	drop/ fish buffers 300' elev/major W/f	
63820-H	51	875	90	788		remove S portion/ low elevation	
63850-H	64	1618	90	1456		high elevation west slope	
63920-H	14	257	90	231		hand plant n/c	63960
63960-C	12	209	90	188	104	40% heli (83.6mbf) low elevation north	63970
93970-C	13	284	90	256	143	40% heli (113.68mbf) temp road	63971
63971-	12	317	90	286	159	40% heli (126.8mbf) temp road	63970
64010-C	12	217	90	195		n/c	
64020-H	64	966	20	193		n/c	
64110-H	21	321	90	289		change to heli 90%	
64210-H	28	488	80	390		drop S. portion/ windfirmness	
64410-C	23	425	90	383		change to heli 90%	
64420-H	9	172	90	155		n/c	64410
64510-H	33	596	80	477	238	reduce to 40% heli (238.4mbf)/	
64530-H	3	56	90	50		n/c	
65013-H	13	255	90	230	230	remove/ windthrow	
65020-C	63	1072	90	965		feather west edge	
Total	1834.5 Acres	39,731	72.5	28,790 FS	10,866 FG	17,924 Amount left to harvest	

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Unit #	Acres	volume	%	mmbf	deletions	Comments/concerns	Connected
62610-C	34	663	80	597		change to helicopter (no road)	62611
62611-S	20	722	90	649	505	S. slope 20% w/heli (144mbf) above	62610/20
62620-S	11	412	20	82		temp road	62611
62630-S	15	582	20	116		temp road	62640
62640-C	9	334	90	301	234	20% w/heli (67mbf) temp road	62630
62650-C	45	908	90	817	635	20% heli (182mbf) drop S. portion	2041/2160
Total	134			2562	869	1693	
VCU	2041			FS	FG	Left to harvest	

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Unit #	Acres	volume	%	mmbf	deletions	Comments/concerns	Connected
60420-C 31	1023	90	921	921		Wlf use/eliminate linear layout	
60710-H 59	1235	20	247			drop east section/ goshawk site within	
60810-H 5	127	90	114			n/c	
60910-H 10	84	90	75			n/c	
61011-H 18	413	40	165	165		low elev. fragmentation	61040
61012-H 10	182	40	73			n/c	
61020-H 26	491	20	98	50		remove west edge windfirm fish buffer	61030
61030-C 35	810	90	729	300		remove east lower portion fish streams	61020
61040-H 9	156	70	109	109		Wlf use/ windfirmness	61011
61310-C 11/8	170	90	153			map/card differ in acres	61311
61311-C 2	30	90	27			n/c	61310
61410-S 25	619	90	503	300		drop 2 on west/ linear / drainages	
61510-S 30	770	90	693	693		no road corridor through 60420-c	
62710-C 21	533	90	479	372		20% heli S slope wind factor (107mbf)	
62730-C 12	202	90	182	142		20% heli (40mbf)	
62810- 31	559	90	503	391		20% heli (112mbf)	
62820-C 14	259	40	103	51		20% heli (52mbf)	
62840-C 5	100	90	90	70		20% heli (20mbf)	
62850-C 20	357	40	143	71		20% heli (72mbf)	
62860- 14	250	90	225	175		20% heli (50mbf)	
63110-S 16	288	90	259	201		20% svi (58mbf) remove small east part	
63120-H 10	187	80	149	74		40% heli (75mbf)	
63510-C 19	341	90	307			change to heli 90% sensitive plants no	
63520-C 6	136	50	68	68		drop fish buffers 300' elev major WC	
63820-H 51	875	90	788			remove S portion low elevation	
63850-H 64	1618	90	1456			high elevation west slope	
63920-H 14	257	90	231			hand plant n/c	63960

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Unit #	Acres	volume	%	mmbf	deletions	Comments/concerns	Connected
63960-C	12	209	90	188	104	40% heli (83.6mbf) low elevation north	63970
93970-C	13	284	90	256	143	40% heli (113.68mbf) temp road	63971
63971-	12	317	90	286	159	40% heli (126.8mbf) temp road	63970
64010-C	12	217	90	195		n/c	
64020-H	64	966	20	193		n/c	
64110-H	21	321	90	289		change to heli 90%	
64210-H	28	488	80	390		drop S. portion/ windfirmness	
64410-C	23	425	90	383		change to heli 90%	
64420-H	9	172	90	155		n/c	64410
64510-H	33	596	80	477	238	reduce to 40% heli (238.4mbf)	
64530-H	3	56	90	50		n/c	
65013-H	13	255	90	230	230	remove windthrow	
65020-C	63	1072	90	965		feather west edge	
Total	660			10263	3482	6781	
VCU	2160			FS	FG	Left to harvest	

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Unit #	Acres	volume	%	MMbf	deletions	Comments/concerns	Connected
2810-C	14	288	90	259		Pull back E. edge	
2820-H	58	1283	90	1155		drop S. piece for 500' corridor /3000'	
3112-C	22	389	90	350		(hand plant)	
3221-C	33	941	90	847		drop S. corridor/ windfirmness	
3222-C	47	1108	35	388		drop S. corridor/ windfirmness	
3520-	31	613	90	552		borders with 3530-H/C	3530
3530-	32	717	90	646		borders 3520-H/C	3520
3610-C	26	559	90	504	504	next to and across from previous	
4011-S	5	193	20	39	39	Wlf use/ blowdown/regeneation	4012
4012-H	12	343	20	69	69	Fish/ blowdown/regen problems	4011
4120-H	59	1073	90	965		high elevation	
Total	339			5774	612	5162	
VCU	2200			FS	FG	Left to harvest	

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Proposed Additions to VCU 2200

Unit #	Acres	volume	%	MMbf	deletions	Comments/concerns
2220-H	32	521	90	468		
2310-H	10	160	90	144		
2340-H	8	138	90	124		
2710-H	46	667	90	601		ALT E*
3010-H	13	225	90	203		
3020-H	8	85	90	76		
4440-H	17	408	90	367		
4620-H	30	845	80	676		modified to harvest upper portions of
4910-H	35	943	90	849		
5020-H	30	392	70	275		
5410-H	20	334	90	301		
Total	249			4084		
Total VCU	588					
	2200			9246		All units selected from ALT F except

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Unit #	Acres	volume	%	mmbf	deletions	Comments/concerns	Connected
20510-H	17	268	90	241		n/c	
20610-H	14	237	80	190	190	parallel to fish/existing cut windfirm	
20710-C	11	88	50	43	43	small unit between existing cut	
20810-H	22	351	70	246		n/c	20812
20812-H	5	84	70	59		n/c	20810
20910-H	8.5	112	50	56	56	parrallel fish directly across from 20810	
21010-C	16	466	90	419	419	Within HCA	
21410-H	25	727	35	254	254	Bear buffer unit under 700'	21420
21420-H	25	723	35	253		bear buffer? partial 800' elevation	21410
21511-C	18	509	90	458	458	bear buffer unit under 600'	21520
21520-H	23	679	90	611	611	Wif use/ blowdown coridor/ 1/2 is under	21511
21610-H	28	771	40	308		Wif use/ windthrow/fish streams/ existing	
21820-C	39	1028	90	925	925	unit <800'	21830-
21830-H	23	534	90	481		n/c	28120-
21840-H	43	1168	90	1003		n/c	21830-
21910-H	12	211	90	190	190	<800' fish stream buffers surrounding	22010
22010-H	26	458	50	229		n/c	21910
22110-H	14	259	40	103	103	Wif use/ fish stream	22130
22120-H	26	543	40	217		n/c	22140
22130-H	20	374	90	337	337	Wif use/	22110
22140-H	57	1049	40	420		remove west portion/windfirmness	22120
22210-H	22	438	90	394	197	remove west piece/ fish stream	
22230-H	4	78	90	70	70	between 2 fish crks	
Total	498.5			7507	3853	3654	
VCU	2221			FS	FG	Left to harvest	

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From a strictly biological viewpoint, we would be better off to increase the timber harvest entry to the west side of VCU 2200 and defer entry into Ten Mile Creek and the two sub-unit watersheds of the S. Fk. of Freshwater Creek. A less preferable option would be to defer some of the units and roads in these areas and changing to a more conservative silvicultural prescription. We recognize the short-term 'cost' in this strategy incurs a decline in timber volume, to some degree. However, continuing the fragmentation pattern that was initiated with the previous timber entry will not "buy" us anything except to meet a present volume target. It will not allow any easier decisions for the next entry beyond this one and offers more negative consequences to wildlife and biodiversity resources.

S. Fork of Freshwater Creek

The fragmentation issue for the southernmost sub-unit watershed of the S. Fk of Freshwater Creek in very general terms located previous clearcuts in a valley bottom. The east side of this valley is steep, well drained and has a higher spruce component. Biologically, the east side of the valley provides access from the higher alpine areas to winter use areas (thermal cover and canopy snow interception) in the lower end of the Freshwater Creek drainage. Some of the remnant stands between the clearcuts provide important travel corridors for wildlife moving from the east side of the valley to the west side. The west side of the valley, above the riparian area, has more natural opening (muskegs and non-commercial timber areas) except for the southwest corner which provides access to the Ten Mile Creek drainage. The hydrologic break between Ten Mile and Freshwater Creek is comprised of a combination of muskeg and non-commercial timber stands on the south side of the junction of the drainages. There is little vertical stand structure as compared to the north side. This is important for snow interception and thermal cover.

The northern and middle sub-unit watersheds of the S. Fork of Freshwater Creek are virtually unfragmented. They are the only major watershed segments in the project area that have not been entered by previous timber harvest and road building. They are also the only major watershed segments in the NECH area that have not been entered by previous timber harvest and road building. Consequently, deferring timber harvest during this entry would allow these two unlogged and unroaded watersheds to be used for effectiveness monitoring. The proposed 7500 Road up the northern sub-unit fork and into the head of Game Creek in VCU 2041 will significantly reduce its value as an unfragmented travel corridor for wildlife species. Both of these drainages provide adjacent connectivity to the small old-growth reserve unit.

From the snow cover map completed by the Ecoteam, the upper riparian corridor of the S. Fk of Freshwater Creek provides early seasonal access for wildlife due to relatively shallow snow depths. The remaining vertical stand structure and canopy closure provide an important biological connection that has already been narrowed by the previous clear cut locations. The natural disturbance regime (wind) is small, stand-sized occurrences.

Ten Mile Creek

The fragmentation issue for Ten Mile Creek is more aggravated than either Indian River or Freshwater Creek due to the restricted area and narrowness of the drainage. Again, the previous clearcuts are situated in a valley bottom. Both sides of the drainage are steep, however, the north side has a band of cliffs between 500'- 800' elevation. Brushfields are more prevalent on the south side. The north side of the valley is generally better drained than the south side, although soils subject to mass movement are present on the steep slopes. Biologically, the north side of the valley has been heavily impacted by the previous clear cuts in its ability to provide access from the higher alpine areas to winter use areas (thermal cover and canopy snow interception) in the lower end of the Ten Mile Creek drainage or movement back towards Freshwater Creek. Some of the

ADF&G-28
(cont.)

remnant stands between the clearcuts provide important travel corridors for wildlife moving from the north side of the valley to the west side, or up and down the drainage itself. The area south of the last clear cut (only naturally fragmented to date) showed considerable use by deer, brown bears, and marlen. The stream itself has the longest anadromous fish passage than either Indian River or upper Freshwater Creek.

ADF&G-28
(cont.)

From the snow cover map completed by the Ecoteam, the north side of the drainage opens up first (south-facing slopes). The intact canopy of the stands south of the last clearcut provide shallow snow depths for travel and foraging during the winter/early spring periods. The remaining vertical stand structure and canopy closure provide an important biological connection that has already been narrowed by the previous clear cut locations. The natural disturbance regime (wind) is small, stand-sized occurrences and blowdown has occurred in every existing unit.

Wind Disturbance

The Ecoteam devoted a significant amount of time analyzing the importance of the wind disturbance regime on NECH. In follow-up work, Garvey (A Landscape Assessment of Wind Disturbance on Northeast Chichagof Island: Implications for Resource Management, July 1997) noted that "about 75% of all blowdown occurs at or below 800 feet in elevation while less than seven percent occurs above 1500 feet". He also found that the NE through SW aspect classes are the wind-prone aspects.

The DEIS unit pool does a much better job in reducing the overall size of the harvest unit from the average of 62 acres (average unit size on FS lands on NECH). The total average unit size for all units in the Preferred Alternative is about 23 acres, however 24 specific units in the pool are greater than 27 acres in size. Garvey's work showed that the average even-aged blowdown size is 27 acres. A closer look at a summary of the unit pool shows that many "units" are merely separated by a change in harvest tactic. While this may silviculturally suffice for a unit delineation and is certainly a different disturbance factor than having clearcut units immediately adjacent to one another, there is still a cumulative effect of disturbance/fragmentation that is being "distributed" across the landscape in a considerably different pattern than what occurs naturally. This is a combination of natural and man-caused fragmentation, of which one factor is blowdown. Garvey's paper found:

"From this particular study, the most apparent difference between wind and harvest disturbances is one of scale. Relative to disturbance by wind, a great number of acres have been affected by harvest in a relatively short time period on northeast Chichagof Island. There appears to be no precedent within the approximately 300-year span of this study for stand replacement disturbance occurring on the scale of current timber harvest. The result of harvest has been an increase in structural simplicity - a greater proportion of productive forest acres in early development stages. "When undisturbed, the horizontal structure of a landscape tends to progress toward homogeneity. Moderate disturbance rapidly increases heterogeneity. Severe disturbance may increase or decrease heterogeneity." (Forman and Godron, 1986) The decrease in landscape-scale structural diversity is evident in a comparison of Maps C and D. Using the same age and structure criteria, these maps display the variety of structural conditions which have existed historically with wind and exist currently with timber harvest. Like a "pig in a python", a great 23,000 acre bulge of recent timber harvest is about to enter the stem-exclusion stand-development stage. It will take at least two centuries for these areas to be "digested" and to develop the more advanced structure and composition which characterizes the shrub-reinitiation, conifer-reinitiation, and old-growth stages."

ADF&G-29

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Appendix A, page 14 mentions that silviculturalists examined harvest units from the first entry, found them suitably re-stocked and subsequently the units are not considered openings; permitting adjacent harvest. While these initial harvest units may meet a silvicultural certification and stand-level review, biologically there are significant reasons to defer harvest this entry. Previous harvest on NECH has occurred on low elevation high productivity acres. These areas tend to be the areas that provide important winter range for wildlife species as well as connectivity between habitat types. While we understand and recognize the LUD designation for timber production, we also believe that the scheduling of harvest units should recognize the current pattern of temporal distribution of disturbance across the landscape. Taking "components" of management and "components" of the landscape without considering a larger, more comprehensive desired condition continues to place resource against resource. The end result appears to be more of a mitigation effort unit by unit instead of a collective resource management approach. This point is well stated in the last paragraph of Garvey's report:

ADF&G-29 (cont.)

"Many of the ecological and social issues we face today are linked directly or indirectly to landscape-scale forest structure. These issues include biological diversity, wildlife population viability, and subsistence opportunities. Silviculturists, more than any other specialist group, are equipped through training and experience to understand the dynamics of forest structure and to assist wildlife biologists and ecologists to link forest structure to other forest attributes and issues. In the past, silviculturists have focused forest structure knowledge at the stand level. It is becoming clear, however, that to address many of today's issues, we need to think beyond the stand and apply our stand-by-stand acquired knowledge to the larger landscape. Understanding the relationship between landscape-scale processes like disturbance and forest structure development is an important first step in meeting the demands on our specialty."

Brown Bear

During a meeting between the department and FS staff on September 30, 1997 information concerning important bear foraging areas that would require 500-foot buffers as per revised TLMP S&G were discussed. Areas included Indian River and Ten Mile Creek downstream of falls on both streams and area at road junction at headwaters of Indian, Ten Mile, and Freshwater drainages where bears are numerous in travel. In addition, we discussed plans for the construction of fish pass for cohos on Indian River that could make the upper river an important foraging area. Although there was some disagreement on whether or not the bears were more attracted to pink runs than coho runs, we did agree that there was a need to do field work during bear fishing season to determine whether other areas are used by bears.

ADF&G-30

We note that 500-foot brown bear buffers were not shown or discussed on unit cards for units downstream of falls on Ten Mile creek. We request that the unit cards acknowledge the need for the buffers to be established and show them on all applicable units.

We believe the DEIS should reflect the department's suggestion that there was a need for more fieldwork to establish important brown bear foraging areas. TLMP directs the FS to consult with ADF&G as to what areas are important and we believe that this to be further addressed.

Small HCAs

The alternative maps did not delineate the boundaries of HCAs in the project area. Although we acquired an overlay copy that was scaled to the alternative maps, other reviewers did not have this

ADF&G-31

FS Response

ADF&G-29 Comment noted.

ADF&G-30 Refer to Response ADF&G-13. We do not agree that 10-Mile Creek below the falls meets the criteria for additional protection of important brown bear foraging sites. We do not agree that this standard and guideline applies to entire stream reaches or to areas where brown bears travel. However, we have agreed to requiring a wildlife biologist during lay-out of the affected units to ensure that an adequate buffer is identified. The Forest Service will continue to consult with ADF&G regarding potential important brown bear foraging sites.

ADF&G-31 Refer to response ADF&G-4.

FS Response

ADF&G-32 Refer to response ADF&G-6.

ADF&G-33 Small HCA locations were determined in the modified 1997 Forest Plan using management objectives found in Appendix N. The review and rationale for the current location of HCAs in the Project Area was discussed in the Chapter 4 Wildlife, "Other Aspects of Population Viability" section. Refer also to response ADF&G-6.

ADF&G-34 Refer to responses ADF&G-6 and ADF&G-33.

ADF&G-35 Refer to response ADF&G-16a.

ADF&G-36 Free passage of fish, both upstream and downstream, will be assured through proper design, construction, operation, and maintenance. Refer also to response ADF&G-24.

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opportunity. We suggest that a boundary line around HCAs be included in revisions of the Alternative maps. Recent EISs (Crystal Creek and Chasina timber sales) have delineated them.

The DEIS mentioned review of small HCA locations with USFWS but not ADF&G. We believe that State agencies need to be part of the review (see the relevant passage on page 33 of the TLMPR ROD).

We have previously requested a written rationale for the current location of HCAs in the project area during the Category 3 S&G meeting in September 1997. To date, it has not been received. We believe that HCA reviews are supposed to be done at the project level as part of project planning and is likely the IDT's responsibility.

Connectivity

Several issues remain regarding connectivity between small old growth reserves and other natural setting land use designations. We maintain that small HCAs need to have connectivity, but there are additional reasons for siting a HCA. Other issues that pertain are the quality of wildlife habitat, what species are benefited, and what are the options for an HCA relocation if another site is better suited. While the current location may be the best one, we would like to have the opportunity to review and discuss it with the planning team. Although we have been told that the FS has reviewed them internally and decided that [the existing location(s)] looked good, we maintain that FS internal reviews are not sufficient since TLMPR requires the FS to include the state in its review (see page 33 of the TLMPR ROD).

TITLE 16 COMMENTS

The ADF&G and FS continue to have high level discussions to resolve the matter of whether or not (or how) the ADF&G has Title 16 authority over FS activities. It is our understanding that additional progress has recently been made, but that the discussions have yet to be concluded. Therefore, the ADF&G continues to press for full compliance by the FS with Title 16.

Any potential obstruction (such as a culvert or bridge) to a fishbearing stream (that is, used by either anadromous or resident fish) must be designed, constructed, operated, and maintained such that free passage of fish both upstream and downstream is assured. The ADF&G does not agree with the FS that culverts 48" (1.2m) or less in diameter are automatically exempt from interagency review. All crossing structures in fishbearing waters are to be evaluated for adequacy in order to assure passage, to manage rivers, streams, and lakes habitat consistent with the habitat guidelines of the ACMP, and to comply with the requirements of the Alaska Forest Resources and Practices Act and Regulations. Additionally, all activities within the limits of ordinary high water of water bodies specified in the *Catalog of Waters Important for Spawning, Rearing or Migration of Anadromous Fishes* are to include plans and specifications for the proper protection of fish and game in connection with the construction, work, or use.

CONCLUSIONS

Significant improvements in unit and road cards, and additional watershed and stream classification information is needed for much of the Indian River Timber Sale. Under ACMP standards for federal timber sales found in the State's forest practices Act and Regulations, this sale is not yet ready for a detailed, site specific review of its compliance with those. Review under those statutes and regulations requires that units, roads, and fish and wildlife accommodation measures be sufficiently determined and flagged in the field that an inspection of the proposed activities is possible; in other words, that the operational features are actual rather than conceptual or approximate. This does

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not mean that these features are absolutely locked in and not subject to minor adjustment as operations proceed, but rather that the information provided must be "in sufficient detail to inform the public of the nature and location of the proposed operations," (AS 41.17.090) and include those items specified in the Regulations.

Significant NEPA issues remain, particularly with stream classifications, landscape fragmentation/temporal distribution, bear buffers, and connectivity between old growth habitat LUDs. The ADF&G remains committed to working with the FS to help resolve these concerns. A memorandum of understanding between the FS and the ADF&G is still under development to help resolve a number of Title 16 issues.

Thank you for the opportunity to provide additional comments on this matter. If you have any questions or need further information, please contact me.

cc: Janet Kowalski, ADF&G H&R, Juneau
Lana Shea Flanders, ADF&G H&R, Douglas
Bill Hanson, ADF&G H&R, Douglas
Scott Marshall, ADF&G CFMD, Douglas
Rocky Holmes, ADF&G SF, Douglas
Bob Schroeder, ADF&G SUBS, Douglas
Kim Trius, ADF&G WC, Douglas
Kevin Hanley, DEC, Juneau
Richard Enriques, FWS, Juneau
Cindy Hartmann, NMFS, Juneau

FS Response

AF-1 National Forest resources are public resources and the Forest Service manages these resources with multiple-use, sustained yield concepts.

AF-2 Refer to the third paragraph in Response TCP-3 and Response ADF&G-9.

AF-3 Refer to the Wildlife and Subsistence sections in Chapter 4 for impacts to deer habitat and subsistence opportunities.

AF-4 There is nothing in this EIS that prevents qualified bidders from Tenakee Springs bidding on timber sales on the Tongass National Forest.

Refer to the Other Issues section, Small Timber Sales portion of Chapter 1 of this project specific EIS.

Jan 13, 1998

Dear Lynn Shirley:

I am troubled by the recent news that large-scale logging could happen near Tenakee Springs. I strongly oppose the current proposed alternative of the Indian River Timber Sale, as it has detrimentally far-reaching effects on such a small, independent community. The residents of Tenakee Springs are losing so much of what makes it special to them. I would be angry also if my backyard hunting, fishing, recreational & livelihood-related efforts were at risk due to this current proposal.

No more logging roads! First, it is necessary to protect the fragile, integral karst system from being destroyed. Second, more roads may subject Tenakee Springs to off-road vehicles gaining access from the ~~normal~~ road system, which would violate Section 106 of The Tongass Reform Law.

Already, deer have been hurt by previous logging in the Tenakee Inlet. People say it is increasingly harder to harvest deer for sport or subsistence. Those concerns need to be fairly addressed or how to preserve habitat for wildlife. Large flocks of logging are detrimental on deer habitat. Long-term impacts must be addressed with sales like this one and others planned for Tenakee Inlet.

It also troubles me that no plans are in the works for timber to be made available to the local community if it is harvested from. It would make sense to harvest on a smaller scale and provide it for a value-added manufacturing

AF-1

AF-2

AF-3

AF-4

FS Response

AF-5 Refer to Response SEACC-8.

Industry.
Please look into other alternatives to the proposed large-scale logging in the Tenakee (not, effects from a poor choice of sites will have long-term disastrous fallout on the community (human, animal & other life) of Tenakee Intd.

Sincerely,

Aussa Beng Frick
Auke Bay, AK

AF-5

FS Response

AF1-1 Refer to Response TK-4. Refer to the modified 1997 Forest Plan map to compare land use designations on Chichagof Island and Prince of Wales Island.

AF1-2 Timber management activities in this project specific EIS are tiered to the modified 1997 Forest Plan. Wildlife habitat and roadless areas are considered in the 1997 TLRMP EIS and this project specific EIS.

AF1-3 Refer to the Wildlife and Subsistence sections in Chapter 4 for impacts to these resources and opportunities.

AF1-4 Refer to Response TCP-3.

To: USFS
From: Anne Fuller
Re: Indian River Timber Sale
Date: Jan 16, 1998

Tenakee Springs is not an individual site. I treasure it as an out-of-way spot. Don't make it look like POW Island. Plan your activities to protect the value of the hunting grounds and roadless areas.

People depend on the area for subsistence and sport deer. Science shows deer need old growth forest and do not flourish with roads.

Logging and roadbuilding are dangerous to the preservation of the unique landscape (KARST).

Thank you!

*Anne Fuller
7943 N Douglas Hwy
Juneau AK 99801*

AF1-1

AF1-2

AF1-3

AF1-4

FS Response

A&JC-1 Comment noted.

A&JC-2 Comment noted.

A&JC-3 This project specific EIS does not approve exporting logs to Japan or anywhere else. In order to export logs, an export permit would need to be approved by the Regional Forester, following the criteria in the export policy issued March 27, 1998.

A&JC-4 The modified 1997 Forest Plan allocates 13,662,000 acres to non-development land use designations (LUDs) and 3,632,000 acres to development LUDs (1999 ROD, page 6).

A&JC-5 Roads are one of the components in the suitable wildlife habitat models for brown bear and marten. Refer to the Wildlife section in Chapter 4 for additional information.

A&JC-6 The Old-growth Habitat strategy in the 1997 TLRMP EIS establishes old-growth habitat reserves with travel/migration corridors along beach and estuary fringes, stream buffers, and small old-growth reserves to ensure that wildlife populations will continue to be viable.

A&JC-7 Alternatives to Traditional Clearcutting is an issue addressed in this project specific EIS.

*For - Bryan Shipley
U.S. Forest Service
Tongue River Forest
Chittum, Area
204 Eginaka Way
S. Elba
FAX 907-747-4331*

1-20-1998

- A&JC-1 *I am against the Indian River*
- A&JC-2 *timber sale. No more roads in the*
- A&JC-3 *totpass!!! No more wood to paper.*
- A&JC-4 *Alaska future is in its wilderness.*
- A&JC-5 *Leave the nature of Alaska natural.*
- A&JC-5 *Roads compromise game populations.*
- A&JC-5 *If you surround a wild area with*
- A&JC-6 *more activities new game stock can't*
- A&JC-6 *migrate in. If you can't meet you*
- A&JC-6 *can't mate. No more clear cuts in*
- A&JC-7 *Timber sale please.*

*July 2001
626 5th St
Juneau AK 99801*

*A. J. Condit
626 5th St
Juneau, AK 99801*

10-1 494-986-1464 TEL 8 + 8 STANDS 45:51 BE-02-AJC

January 16, 1998

Lynn Shipley, Team Leader
USDA Forest Service
204 Signaka Way
Sitka, AK 99835

Re: Opposition to Indian River timber sale

Dear Ms Shipley:

I am writing to oppose the Indian River timber sale because it is out-of-line with the direction the world is heading, and will be destructive to the ecosystem and economy of Tenakee Springs, a place of beauty and solitude.

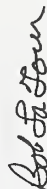
The amount of timber to be taken from the valley will do little for the local population because it will only be a short term harvest using destructive roads which will cause erosion, decimate wildlife habitat, and increase ATV activity because of the proximity of Game Creek road.

The deer population has declined significantly because of prior logging and strong demands for game. Residents of Tenakee Springs currently enjoy an economy of commercial and sport fishing, subsistence and sport hunting, trapping, and tourism and recreation. Such sales will destroy all the good things that happen there now.

I ask that you take a hard look at the impacts associated with this and other timber sales planned for Tenakee Inlet. I believe that your goal should be to manage the forest for the benefit of wildlife and the people who use that resource in the area, not for the benefit of timber capitalists.

I therefore recommend you scrap the current proposal and design a timber sale which responds to the economic and human needs of the people of Tenakee Springs or leave the area exactly as it is for the benefit of the area and the planet. A plan using selective logging for manufacturing value-added products in the immediate area would be acceptable.

Sincerely,



Bob LaTour
3473 Richards Dr.
Juneau, AK 99801

FS Response

BL-1 Comment noted.

BL-2 Refer to the Fish and Fish Habitat portion of the Soils, Water, and Fish section, and the Wildlife section in Chapter 4 for impacts to these resources; and Response ADF&G-9.

BL-3 Comment noted.

BL-4 The mission of the Forest Service is, in part, "to achieve quality land management under the sustainable multiple-use management concept to meet the diverse needs of people."

BL-5 The alternatives provide a range of selective (uneven-aged) harvest methods to supply manufacturers throughout Southeast Alaska.

1-13-98

Forest Supervisor
Tongass National Forest Chatham Area
attn: Indian River EIS
204 Siginaka Way
Sitka, AK 99835

Forest Supervisor,

As a eighteen year resident and property owner in Tenakee Springs I feel compelled to write and voice my concerns about the DEIS for the proposed Indian River Timber Sale.

The DEIS does not acknowledge an important provision of the Memorandum of Understanding that Tenakee residents voted to approve last year, in which the Forest Service agreed that if the Sunny Cove site was used there would be no log dump at Ten-Mile Creek. Some of the alternatives show both sites used.

Inadequate purpose or need for the proposed project.

Proposed timber sales are "below cost" - in other words it will cost us, the taxpayers and our dollars to cut this timber.

All action alternatives are based on large scale logging - there is not a genuine range of alternatives.

Proposed road construction would bring the Indian River road approximately 3/4 mile from the Game Creek road and the rest of the Hoonah road system. The Forest Service will probably state that they are obeying the Tongass Timber Reform Act by not physically connecting the road systems, but the proposed road construction would bridge all the ravines and natural obstacles that currently prevent ATV's, four wheel drive trucks and other vehicles from access. With only 3/4 mile between the road systems with no natural barriers, it will be too easy for anyone with these vehicles to make the connection. There needs to be left in place between the two road systems enough natural barriers to make it impassable with any kind of vehicle.

FS Response

BMB-1 Refer to Response CTS-3.

BMB-2 Comment noted.

BMB-3 Refer to the second part of Response TK-3.

BMB-4 Refer to Response CTS-7.

BMB-5 Refer to Response ADF&G-9.

BMB-1

BMB-2

BMB-3

BMB-4

BMB-5

Concerns about the DEIS for the Proposed Indian River Timber Sale - Cont.

Concern about the current and long term effects on subsistence resources, especially deer. Tenakee is a subsistence community and we who live here are dependent on deer for a large part of our yearly food cache. The impact of logging which consists of humans, noise, equipment (trucks, yarders, helicopters etc.), haz-mat substances, blasting and changes in the game trails of the local deer population all have negative effects.

If the road systems mentioned above are only 3/4 mile apart and vehicles make the passage between the two, that is more pressure on our local deer population. We have enough hunters coming out from Juneau and Sitka by ferry to hunt and do not need more coming in from the Hoonah road system.

The effect of the loss of wildlife habitat from logging. Old growth and second growth areas are prime deer habitat and with the logging of thousands of acres there can only be a negative impact not only on deer but every other species of wildlife that live within those areas.

I as a resident of Tenakee Springs do not find anything positive about the proposed Indian River timber sale and want to go on record as being opposed to it.

Sue Barnes

Ms. Beret M. Barnes
PO Box 502
3/4 mile W. Tke Trail
Tenakee Springs, AK 99841

BMB-6

BMB-7

BMB-8

BMB-9

FS Response

BMB-6 Refer to the Wildlife and Subsistence sections in Chapter 4 for impacts to deer.

BMB-7 Refer to Response ADF&G-9. Also, deer are a public resource. Alaska Board of Game and Federal Subsistence Board regulations are not put into effect to prevent residents of Hoonah from participating in hunting or subsistence activities (except as permitted by law).

BMB-8 Refer to the Wildlife section in Chapter 4 for impacts to this resource, including deer.

BMB-9 Comment noted.

1/12/98

Forest Supervisor,

Upon reviewing your Draft Environmental Impact Statement concerning the proposed Indian River timber sale I was alarmed to note several potentially harmful possibilities as well as areas of previous agreement which were ignored and changed without the knowledge of people in Tenakee Springs.

To be specific, this statement still does NOT demonstrate any adequate purpose or need for the project. Even worse, it does not acknowledge the Memorandum of Understanding voted on by Tenakee residents in which the Forest Service agreed that if the Sunny Cove Site was used there would be no log dump at Ten Mile Creek. Some of your alternatives show both sites being used--- a severe disaster for our inlet. This breach of trust is destructive to our communication as well as our ecology.

Also, the long term cumulative effect of past, present and foreseeable future sales is not adequately explored, neither are the cumulative impacts of simultaneous sales, such as the "Finger Mountain" sale. It is quite obvious that all action 'alternatives' are based on large scale logging and not on a genuine range of real alternatives.

Other inadequacies of the DEIS include a lack of honest attention to current and long term impact on subsistence, especially deer, the loss to all wildlife habitat, helicopter noise, loss of local income from guided recreation, proposed logging on 'high vulnerability' karst terrain. There has been no provision to ensure sustained availability of high quality timber for local small scale manufacturing.

If all this weren't bad enough, the proposed road construction would bring the Indian River Road approximately 3/4 mile from the Game Creek Road, bridging all ravines that currently prevent or inhibit ATV access. This is totally unacceptable to our community.

Probably most disgusting of all is the complete lack of spiritual awareness: knowing and honoring this land as it inspires and provides for its artists, craftspeople, poets, and shamans.

To top of all these abominations, the proposed timber sales are 'below cost'---will actually cost every taxpayer to cut these trees.

Reconsider this plan immediately and make appropriate changes with the guidance and consent found in honest communication with the people of Tenakee Springs who will have to live with this action for the rest of their lives and for generation to come.

Sincerely Yours,

Bruce Ware
Bruce Ware
Gen. Delivery TKE, AK 99841

FS Response

BW-1 Comment noted.

BW-2 Refer to Response ES-4 and Response SEACC-16.

BW-3 Refer to Response SEACC-20.

BW-4 Refer to Response SEACC-8.

BW-5 Refer to the Subsistence section, Wildlife section (including the Helicopters portion for impacts on wildlife species), and Recreation section (including the Visuals and Noise portion for impacts of helicopters on people).

Refer to Response TCP-3.

Refer to the Other Issues section, Small Timber Sales portion of Chapter 1 of this project specific EIS.

BW-6 Refer to Response ADF&G-9.

BW-7 Comment noted.

BW-8 Refer to Response TK-3.

BW-9 Comment noted.

BW-1

BW-2

BW-3

BW-4

BW-5

BW-6

BW-7

BW-8

BW-9

Chichagof Conservation Council
Box 621 Tenakee Springs Alaska 99841

January 19, 1998

Forest Supervisor
Tongass National Forest Chatham Area
attn: Indian River EIS
204 Siginaka Way
Sitka, AK 99835

Dear Forest Supervisor,

The Chichagof Conservation Council is a non-profit organization dedicated to providing information and education regarding conservation of natural resources. Our members are a diverse group of commercial fishermen, tourism operators, business owners, small timber operators, sport and subsistence hunters, recreationists, residents and visitors who are concerned about the future of Tenakee Inlet, Chichagof Island and the Tongass National Forest.

On behalf of our members, the Chichagof Conservation Council endorses the comments on the Draft Environmental Impact Statement for the proposed Indian River Timber Sales that were submitted by the City of Tenakee Springs and attached to City of Tenakee Springs Resolution 98-15. A copy of those comments is enclosed. Please address each of the 17 points raised.

We are particularly concerned about the proposal to extend the Indian River Road to within approximately 3/4 mile of the Game Creek Road. We believe this is an egregious violation of the Tongass Timber Reform Act which states that the Forest Service shall not construct a vehicular access road connecting the Indian River and Game Creek Roads, and shall not engage in any further efforts to connect the city of Tenakee Springs with the logging road system on Chichagof Island, unless the city councils of Tenakee Springs and Hoonah both determine that the road should be constructed and so inform the Secretary. The proposed road construction certainly qualifies as a "further effort", especially since the proposed construction would bridge the ravines that are the only impediment to all-terrain vehicle access at this time.

Considering the many shortcomings of this DEIS, the only acceptable alternative listed is Alternative A, the No-Action Alternative.

Sincerely,
Nick Olmsted

Nick Olmsted, Vice-president

FS Response

CCC-1 Refer to Response CTS-2 through Response CTS-18.

CCC-2 Refer to Response CTS-14. Because there is no intent to connect road systems, this is not a "further effort" to connect the City of Tenakee Springs with the logging road system on Chichagof Island.

CCC-3 Comment noted.

CCC-1

CCC-2

CCC-3

COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STUDY FOR THE PROPOSED
INDIAN RIVER TIMBER SALE(S) TO ACCOMPANY CITY OF TENAKEE SPRINGS
RESOLUTION 98-15

1. The DEIS does not adequately document a purpose or need for the proposed project, and the representation of market demand for Tongass timber is fundamentally flawed.

The DEIS states (Chapter 1- Page 3) that the Indian River Sale(s) Project is proposed at this time to respond to the following goals and objectives:

- "1. improve timber growth and productivity on suitable timber lands made available for timber harvest, and manage these lands for a longterm sustained yield of timber.
2. contribute to a timber supply from the Tongass that seeks to meet annual and Tongass Land Management (TLMF) planning cycle market demand; and
3. provide opportunities for local employment in the wood products industry, which in turn contribute to the local and regional economies of Southeast Alaska."

Reading the DEIS plans to accomplish goal #1 in the proposed project gives reviewers a sense of having stepped into a time machine. Just like twenty years ago, the Forest Service is claiming a duty to convert the Tongass from old-growth forest of predominately hemlock to even aged second growth. The only change is that the term "eliminating decadent old growth" appears to have been dropped in favor of "creating a more diverse species mix" of spruce and yellow cedar. It is interesting that the Forest Service thinks it will be possible to force regeneration of yellow cedar in the project area, while elsewhere in the Tongass silviculturists are baffled by an overall decline of that species. It is also interesting that in the past yellow cedar was exported in the round, which was justified by claiming it had "no commercial value" in this country. Now it has become reasonable, at least to the Forest Service, to justify cutting old growth at a loss because yellow cedar might grow back.

Local woodworkers have raised strenuous objections to this flawed reasoning many times in the past. There is simply no replacement for large diameter, knot free, even grained old growth regardless of species. To contend that a knotty, wide - grained pole of second-growth spruce is more desirable than old-growth hemlock is simply ridiculous to anyone knowledgeable about fine woodworking.

The most recent forecast of demand for timber from the Tongass National Forest by D. Brooks and R. Haynes, Timber Products Output and Timber Harvests in Alaska: Projections for 1997-2010, projects low (96 mmbf), medium (113 mmbf) and high (130 mmbf) scenarios for demand for Tongass wood products over the next five years. The Indian River DEIS (Chapter 1, Page 4) erroneously

states that "projected annual sawlog demand for the next decade is 113 mmbf for the low scenario, 133 mmbf for the medium, and 156 mmbf for the high scenario. It is important to note that the Brooks and Haynes report calculated total market demand: "these figures refer to total National Forest Harvest, including both net sawlog and utility volume." (emphasis added). The DEIS characterizes the projected market demand for Tongass timber as demand for saw timber only.

The DEIS goes on with clear evidence that the Forest Service proposes to provide Tongass Timber in excess of market demand, rather than seeking to meet market demand as directed by the Tongass Timber Reform Act. The DEIS states (C1-P4) that "as of June 30, 1997, there is 504 mmbf of unharvested timber volume under contract to the timber industry." Obviously, the Forest Service has already supplied the timber industry with nearly 5 times the estimated "medium" annual demand for Tongass timber. The DEIS continues "at this time, there is approximately 624 mmbf proposed under other ongoing NEPA analyses on the Tongass for the 1998-2002 time period." In a five year period the forest Service plans to provide the timber industry with approximately 1125 mmbf of timber. Total "medium" timber demand for Tongass Timber over the same period is expected to total 565 mmbf.

The DEIS indicates that the timber supplied to KPC under the 3-year contract closeout provisions doesn't count as timber provided to meet market demand. After acknowledging the 504 mmbf of unharvested timber under contract (Summary-P2), the DEIS states "Of this volume, however, 300 mmbf is allocated to the Ketchikan Pulp Company under the terms of the long-term settlement contract, with 204 mmbf under independent industry contract. Thus, in order to meet the intent of having a three-year supply, approximately 195 mmbf of timber needs to be cleared through the NEPA process and offered to the industry." (This is based on Forest Service projection of needing 399 mmbf for a three year supply.) We would like to know who decided that KPC is no longer part of the timber industry.

It is important to note that under all alternatives the Forest Service projects a net loss to the US treasury, and consequently taxpayers nation wide. The losses will range from -\$160/mmbf (thousand board feet) to -\$197/mmbf. (Table 4-22, C4-P36).

It is impossible to justify actively harming current, sustainable employment in Tenakee Springs (see #11) to create short term employment for imported workers and losing money to boot. It is quite clear that the City of Tenakee will derive neither short or long term benefits from this project beyond a paltry sum paid to the City government for tideland use. In fact, the DEIS acknowledges that several components of Tenakee's economy will suffer outright harm if this project is approved.

2. The DEIS does not adequately acknowledge or publish the existing Memorandum of Understanding between the City of Tenakee Springs and the USDA Forest Service of November 12, 1996 (MOU) regarding use of city-owned tidelands at Sunny Cove as an LTF, and fails to acknowledge an important provision of the MOU in which the Forest Service agrees that use of the Sunny Cove Tidelands is conditioned on the fact that no LTF is developed at 10-Mile Creek or any other site in Sunny Cove.

The Memorandum of Understanding between the Forest Service and the City of Tenakee Springs was the result of painstaking, protracted negotiations. A committee of Tenakee residents appointed by the Mayor of Tenakee Springs devoted an enormous amount of time and energy to develop this agreement, and every detail represents what we thought was a good-faith effort to arrive at a compromise that would permit use of the Sunny Cove tidelands and protect other values of surpassing importance to the community. A special election was held to consider the MOU, and voters endorsed it after lengthy discussion and debate. Consequently it is a shocking affront that the MOU is not published in the DEIS, and one of the pivotal points of the MOU is completely disregarded.

The MOU is mentioned in the DEIS on the following pages: Chapter 1, pages 18-19, (C1-P18-19), C2, P17-18, C4, P52, P63-64, P71-72. Some aspects of the MOU are acknowledged, however there is no mention of this statement found on page 3 of the MOU "For the duration of the MOU, the Forest Service agrees that it will not, directly or indirectly, develop or use, or permit the development or use, of alternative log transfer facility sites in connection with the Indian River Project, including but not limited to sites at Ten Mile Creek, or at other locations in Sunny Cove." In case that point needs further clarification, the "Question and Answer" sheet sent to Tenakee voters on January 13, 1997 by Sitka District Ranger Jim Franzel is equally explicit. "Q. Will any other LTF's be developed in the Project Area if Proposition One passes?" (Proposition One endorsed the MOU). "A. No. If Proposition One passes, we have agreed while the MOU is in effect, we will not develop any other LTFs for the Indian River Timber Sales(s) project."

The failure of the DEIS to even mention this agreement, and the bald-faced proposal in Alternative B of simultaneous LTF's at Sunny Cove and 10-Mile Creek is an outrageous breach of public trust.

3. The failure of the DEIS to adequately portray the aforementioned MOU indicates that the Forest Service has failed to follow the direction outlined in the revised Tongass Land Management Plan Record of Decision regarding "collaborative stewardship".

Page 8 of the City of Tenakee Springs appeal of the TLMP Revision Final Environmental Impact Statement (FEIS) and Record of Decision (ROD) raised concerns about the Forest Service efforts to implement "collaborative stewardship" as outlined in the TLMP ROD. By failing to include a copy of the MOU regarding use of City tidelands, disregarding an important provision of that agreement, and completely failing to respond to requests for a community reserve in the project area the Forest Service has shown its inability to implement this new program.

Another example: even though this timber sale has been in the planning stages for several years the Forest Service originally planned the required subsistence hearing within days of the release of the DEIS. Numerous phone calls from Tenakee residents and City Council members could not persuade the Forest Service to simply postpone the meeting to allow residents to review the document. It took an official request from the City of Tenakee Springs with the backing of federal Council on Environmental Quality (CEQ) regulations to have the Forest Service reschedule the hearing. With better planning and communication in the spirit of collaborative stewardship, that confrontation need not have occurred.

4. The DEIS fails to adequately disclose and evaluate the long term, cumulative impact of past, present and reasonably foreseeable timber sales in Tenakee Inlet.

5. The DEIS fails to disclose and evaluate the cumulative impacts of simultaneous logging operations (i.e. Finger Mountain) in Tenakee Inlet, particularly with regard to marine traffic and operation of log transfer facilities with respect to related impacts on tourism, sport and commercial fishing, recreation and the marine environment.

6. The DEIS fails to consider a reasonable range of alternatives, and all action alternatives are based on large-scale logging operations with the "range" from 24-36 million board feet.

7. All action alternatives considered in the DEIS provide timber in excess of market demand while significantly affecting future availability of subsistence resources.

The DEIS acknowledges (C4-43) a "significant possibility of a significant restriction" of subsistence use of deer in the future, due to the cumulative effects of "declining deer capability" caused by clear cuts coupled with increased demand. The DEIS notes (C4-P46) that "the Federal Subsistence Board did restrict hunting by non-rural hunters in GWU 4 in regulatory years 1991 and 1992." It is well established that the extensive cutting already done will diminish availability of deer as the second growth canopy closes. Converting still more productive

habitat to second growth compounds the problem.

Sacrificing future subsistence security for current below-cost sales is simply not acceptable.

While deer are the primary species important to local subsistence users, the project area is also an important area for local subsistence trappers with marten a primary target. While the wildlife section admits that marten habitat will be reduced by 8% under the preferred alternative, the DEIS fails to disclose and evaluate the cumulative effects on marten populations from past, present and reasonably foreseeable timber sales in Tenakee Inlet.

8. All action alternatives would result in unacceptable loss of wildlife habitat.

See Table 4-14, C4-P19.

9. All action alternatives would result in unacceptable levels of helicopter noise in residential areas of Tenakee Springs.

The DEIS apparently makes the erroneous assumption that all of Tenakee Springs' residential area is concentrated in the town core. In fact the residential area of Tenakee Springs runs along the shoreline for several miles in either direction. Residents with homes located east of the town core will be subjected to noise pollution 9 months of the year for 3 to 5 years. It is also likely that west Tenakee will be affected by high elevation helicopter logging directly behind town.

10. All action alternatives are incompatible with current use of the existing Indian River Road by local hunters, tourists, and recreationists.

All references to personal use of the Indian River Road mention the likelihood that under Alternatives B,C,E, and F the road would be unavailable for personal use from March until at least the end of November for the three to five years of timber operations.

11. The DEIS acknowledges that action alternatives will have an adverse impact on current Guided Recreation income of Tenakee residents, and fails to justify or mitigate for that loss.

Table 4-27 (C4-P59) projects a decrease of 17% in the "Average Days of Use by Groups Generating Recreation Tourism Income" under Alternatives B,C,E, and F. Oddly enough this 17% decrease in customers is translated as only a 2% decrease in "Income Generated". While this flawed logic demands correction, we contend that any negative affects to local income are unacceptable, particularly in light of the fact that the proposed sales will result in a loss to the federal government, and

consequently the same tax payers whose income is being reduced.

12. The DEIS fails to acknowledge that use of the East Tenakee Trail is not limited to "recreational" hiking, or to ensure continuous unrestricted safe access to residents who use the trail for basic transportation.

C2-P17 "Impacts to East Tenakee Trail Use" acknowledges that "In all action alternatives, trail use could be disrupted during road reconstruction." Only the effects of noise are acknowledged for the long term, failing to recognize that dodging log trucks and traversing an LTF have other unpleasant and potentially dangerous aspects.

The East Tenakee Trail is an essential transportation corridor for Tenakee residents, who use it regularly to commute to work, school, and civic functions (including meetings with the Forest Service.) When stormy weather precludes small boat traffic, the trail is the only transportation corridor available. Consequently it is extremely offensive to find the only other discussion of potential impacts to the trail under "Recreation", with the following statement found on C4-P54 "However, other recreation opportunities exist in the area, such as the West Tenakee Trail, that could be substituted for the use of the East Tenakee Trail."

13. All action alternatives except E propose construction of roads that would bring the Indian River Road within approximately 3/4 mile of connection with the Game Creek Road, creating a de facto connection for ATV traffic and violating the Tongass Timber Reform Act prohibition of engaging in further efforts to connect the City of Tenakee Springs with the logging road system on Chichagof Island. Alternative E brings the Indian River Road within approximately 1 1/4 miles of the Game Creek Road.

Any attempts by the Forest Service to extend the Indian River road system must be viewed as an attempt to connect Tenakee Springs to the Chichagof Island road system. Section 106 of the Tongass Timber Reform Act states that the Forest Service: "shall not construct a vehicular access road connecting the Indian River and Game Creek Roads, and shall not engage in any further efforts to connect the city of Tenakee Springs with the logging road system on Chichagof Island, unless the city councils of Tenakee Springs and Hoonah both determine that the road should be constructed and so inform the Secretary (of Agriculture)." Therefore, the construction of any new roads which extend the Indian River road system closer to the Game Creek road is in direct violation of the Tongass Timber Reform Act.

14. The DEIS violates the National Forest Management Act and the National Environmental Protection Act because all action alternatives include the construction of additional miles of

permanent roads in the project area while the DEIS fails to disclose the Forest Service long term transportation plan for Tenakee Inlet.

15. All action alternative ignore the standards and guidelines for karst terrain as defined in the Tongass Land Management Plan Revision (TLMP) by proposing logging in areas of high vulnerability karst and proposing construction of new roads across karst terrain without disclosing and evaluating whether other options are available or whether karst resource values will be compromised.

The TLMP Revision provides Standards and Guidelines for management of karst areas, but the Indian River DEIS neglects them entirely. While C3-P9 states that under the new TLMP "karst lands found to be of high vulnerability are removed from the commercial forest lands suitable land base" the DEIS admits on C4-P4 that "all action alternatives include timber management activities on areas assessed by geology consultant, Harza Northwest, Inc., as having low, moderate, and high karst vulnerability." The unit cards found in Appendix J of the DEIS show that at least 7 units contain high vulnerability karst. This is completely unacceptable and in direct conflict with the new Standards and Guidelines.

It also appears that several roads are planned across sections of high vulnerability karst. According to Appendix I (P15) of the TLMP Revision, "small expanses of these areas may be crossed by roads to access areas where harvest is appropriate....this would only be allowed if no other route or option was available and karst resource values would not be compromised." The DEIS does not show evidence of adequate analysis to fulfill these requirements.

16. The DEIS fails to adequately identify the "Reflection Cave", which is clearly a significant cave under the Federal Cave Resources Protection Act and has been nominated as such.

"Reflection Cave" was nominated as a significant cave in 1994. The nomination was approved by the Forest Service committee that reviewed it. The unconscionable delay in formalizing this approved nomination apparently has its source in the Chatham Area office.

17. The DEIS fails to address Tenakee's frequently repeated request for a community development reserve that will assure a supply of high quality timber to be available locally in perpetuity.

Comments compiled by Molly Kemp 12-17-97

FS Response

CO-1 Comment noted.

CO-2 Refer to Chapter 4 for impacts to the fish, marine, wildlife, and timber resources.

CO-3 Refer to Chapter 4 for impacts to the recreation resource and subsistence uses.

CO-4 According to the results of the Forest Service economic model (IMPLAN), direct and indirect employment from Project Area timber sales range from 49 to 76 over a 3 to 4 year period.

"All the trees" will not be harvested in timber sales from this EIS, or at any time in the foreseeable future. There will always be large old-growth timber in non-development land use designations (LUDs), as well as in TTRA and Riparian Management Area buffers and other no harvest areas within development LUDs.

Refer to the Other Issues section, Small Timber Sales portion in Chapter 1.

- THIS IS IN RESPONSE TO THE FOREST SERVICE'S PLANS OF CLEANING UP THE INDIAN RIVER WATERSHED AREA FOR ADDITIONAL ~~TIME~~ ^{WATER} INVESTS, I HAVE LIVED IN JUNEAU FOR 89 OF MY 91 YEARS. I AM EMPLOYED AS A CANOE SWEENER FOR A PEWEE FIRM AND HAVE WORKED IN THE TIMBER INDUSTRY. I HAVE BEEN MANY LOGGERS, PEACEMEN AND I ~~AM~~ ^{WAS} SURELY FOR FOREST SERVICE SALES AND REPAIRS ETC. I HAVE HUNTED AND FISHED IN TENAILE INLET SINCE I WAS 16. IN THAT TIME I HAVE SEEN TENAILE INLET CHANGE DRAMATICALLY, I USED TO HUNT WITH A OLD KINGST MAN NAMED MATT JESSEN (CHIEF) MATT WAS A MORE TRAPPER, LOGGER, FISHERMAN AND ALTHOUGH BAD ASS, HE WAS BORN, RAISED AND DIED IN TENAILE AT 64 2 YRS AGO. I REMEMBER ASKING HIM IF HE THOUGHT FURTHER LOGGING IN THE INLET WOULD DESTROY IT. HE SIMPLY POINTED TO CREEP BAY, LONG BAY, CAMPBELL BAY, INDIAN BAY AND NUMEROUS OTHER PLACES UP & DOWN THE INLET AND TOLD ME LOOK AROUND THIS BEACH IS WASTED MIGHT AS WELL FINISH IT OFF. IN MY SMALL MIND I SEE TENAILE AS BEING AS INCREDIBLY RICH RESOURCE WITH FISH, CRABS, ALGAE, BIRDS, WILDS AND TIMBER. THE PEOPLE OF TENAILE MUST RELY ON THEIR RESOURCES FOR SUBSISTANCE AND THEIR LIVELIHOOD. MANY PEOPLE FROM JUNEAU-SITKA-PTSBG COME TO TENAILE TO HUNT AND FISH AS WELL AS A SMALL BUT GROWING TOURISM INDUSTRY. ~~THEY~~ ADDITIONAL LOGGING UP THE INDIAN RIVER WATERSHED WOULD BE DEVASTATING TO THE LOCAL AREA AND TO THE MANY PEOPLE WHO RELY ON THE INLET FOR RECREATION, SUBSISTANCE ETC. I HAVE BEEN SAID THAT THE DREDGE ARE SOLD WOULD PROVIDE WORK FOR 70-80 MEN FOR 2 YRS. THAT IS NOT A FAIR TRADE OFF. BASICALLY IT SUCKS, I AM NOT ANTI LOGGING I WIFE MY BUTT WITH PAPER PRODUCTS JUST LIKE YOU. HOWEVER THERE IS A RIGHT AND A WRONG WAY.

CO-1

CO-2

CO-3

CO-4

FS Response

CO-5 Comment noted.

CO-4
(cont.)

CURRENTLY THE INDIAN RIVER AREA THAT WAS PREVIOUSLY LOGGED IS IN THE PHASE OF REGENERATION, I DON'T THINK A MOUND COULD MAKE IT THROUGH THE OLD CUE CUTS, HOWEVER I BELIEVE THE FOREST SERVICE DID A GOOD JOB. THE CUTS ARE PATCHWORKED UP THE WATERSHED SO THAT MANY WOODLOT CORRIDORS EXIST FOR SOIL PROTECTION AND WILDLIFE HABITAT. CHOW GUYS IF YOU CUT ALL THE TREES YOU WILL DESTROY EVERYTHING, NOBODY WILL WORK AND LOGGING TIMBER MARKET WILL DRY. I THINK AT THE VERY LEAST THE SALE SHOULD BE CERTAINLY SCALED ^{UP} BACK. SMALLER SALES WOULD PROVIDE MORE JOBS ^{AND} COULD BE SPREAD OUT OVER BIGGER AREAS AND WOULD BE A GOOD START FOR THE FOREST SERVICE. THEN AGAIN YOU PEOPLE HAVE LITERALLY WASTED CHICKADEE ISLAND YOU MIGHT AS WELL FINISH IT OFF! NOW THAT MY LETTER IS AT THE TWO I CAN WRITE SOMETHING THAT I REALLY BELIEVE, THE FOREST SERVICE IS A BUNCH OF GOVERNMENT ~~AND~~ EMPLOYED IDIOTS THAT HAVE NEVER SERVED AS A FOREST AS THEIR NAME IMPLIES. THE FOREST SERVICE LOSES MANY MILLIONS OF DOLLARS A YEAR WASTING THE ENVIRONMENT. I SAY LET'S ~~STOP~~ SEND THAT MONEY PROTECTING, PROTECTING AND BEING A SERVICE TO THE FOREST. IN THE LONG RUN IT WILL PROVIDE MORE JOBS, PROVIDE RECREATION AND SAVE ME MONEY.

PLEASE REVIEW ~~DETERMINE~~ YOUR DECISION VERY CAREFULLY NOT OF LOTS OF DOLLARS ON IT.

Sincerely Your Employer
Charles Oestgen US TAXPAYER

RAY TO
Chad Oestgen 907-586-1735
6655 N DOUGLAS HWY
JUNIOR AK 99801

DEC - 5 1991
HYDRO
RANGER
NFW
MM
SUB
FNL
FSC
FILE

CO-6 Refer to the second part of Response TK-3. Funding for the Forest Service is spent according to the laws, direction, wishes, and desires of the Federal legislative branch (Congress) and executive branch (President) of government.

The responsible official will review the decisions to be made and document them in the Record of Decision for this EIS.

CO-5

CO-6



DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, ALASKA
JUNEAU REGULATORY FIELD OFFICE
JORDAN CREEK CENTER
8800 GLACIER HWY, SUITE 106B
JUNEAU, ALASKA 99801-8079

REF TO
ATTENTION OF

January 13, 1998

Regulatory Branch
East Section

Mr. Lynn Shipley
U.S. Forest Service, Chatham Area
Tongass National Forest
204 Siglinaka Way
Sitka, Alaska 99835-7316

Dear Mr. Shipley:

These comments are submitted in response to the November 1997, Draft Environmental Impact Statement (DEIS), for the Indian River Timber Sale, near Tenakee Springs, Alaska. Although the DEIS Summary states on page 18 that Alternative C is the Preferred Alternative, the DEIS identifies Alternative B as the Proposed Action on page 2-9, which should be clarified. In any case, our comments are presented as a regulatory agency, as opposed to a commenting agency, and the requirements detailed below are requirements of federal law and/or regulation.

COE-1

- **Corps of Engineers (Corps) Jurisdiction:** Based on information provided in the DEIS, we concur that wetlands and waters which are under the Corps' regulatory jurisdiction occur within the project area. Our regulatory authorities that relate to timber harvest operations are based on two laws: Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403) prohibits the obstruction or alteration of navigable waters of the United States (U.S.), and Section 404 of the Clean Water Act (33 USC 1344) prohibits the discharge of dredged or fill material into waters of the U.S., including wetlands, without a Department of the Army (DA) permit.
- **Wetland Impacts:** Wetlands are defined as areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands include "muskegs", forested swamps, marshes, bogs, and similar areas. The DEIS states on page 4-15 that from 1.6 to 2.7 miles of new road would be constructed in wetlands under the action alternatives, which, based on a 50-foot clearing

FS Response

COE-1 Refer to response ADF&G-5.

-2-

width, would affect between 9.5 to 16 acres of wetlands, as mapped by the U.S. Fish and Wildlife Service National Wetland Inventory (NWI) program.

- Clean Water Act 404(f) Exemptions: The DEIS states on page 3-23 that "Sections 404(f)(1)(a) and (e) of the Federal Clean Water Act specifically exempt silviculture, timber harvesting, and related road construction activities from permit requirements for the discharge of dredge and fill material in wetlands (USDA Forest Service 1991)". This statement should be clarified in the Final Environmental Impact Statement. Section 404(f)(1)(a) of the Clean Water Act states that normal silviculture activities for the production of forest products, which are part of an established, ongoing operation, are not subject to regulation under Section 404 of the Clean Water Act. However, in order to qualify, the activity must not result in a conversion of an area of waters of the U.S., (including wetlands) to a use to which it was not previously subject, whereby the flow or circulation of waters of the U.S. may be impaired or the reach of such waters reduced.

COE-2

- In addition, Section 404(f)(1)(e) states that the construction or maintenance of forest roads for silviculture activities is exempt from regulation under Section 404 of the Clean Water Act, **provided the roads are constructed and maintained in accordance with Best Management Practices (BMPs) listed at 33 CFR 323.4(a)(6) to assure that flow and circulation patterns and chemical and biological characteristics of waters of the U.S. are not impaired, that the reach of the waters of the U.S. is not reduced, and that any adverse effect on the aquatic environment is otherwise minimized.** A copy of the mandatory BMPs is enclosed with this letter, and your particular attention is directed to BMPs (i) through (x). In order to qualify for the exemption, forest roads must be used for the sole purpose of silvicultural activities. Roads meeting one or more of the following criteria and meeting the BMPs will generally be considered exempt: (a) roads that are not connected to a community road system or a ferry system (e.g., King George Timber Sale); (b) roads built in isolated locations, with no or low population (e.g., Upper Carroll and King George Timber Sales); (c) roads that otherwise have low anticipated non-silvicultural use substantiated by qualitative descriptions and/or data from similar projects and areas (e.g., traffic less than that associated with the silvicultural operation provided the maintenance level of the road is not increased); (d) roads prescribed to be closed by a road order under 36 CFR 261, or by blocking to prevent travel by cars and trucks (e.g., South Lindenberg Timber Sale); and (e) roads that are not connected to an arterial road system. Roads not meeting any of these criteria will usually require DA authorization.

COE-3

FS Response

COE-2 The statement has been clarified as you suggest.

COE-3 Project roads will be constructed and maintained in accordance with Best Management Practices as stated in your comment letter.

Regarding silvicultural exemption criteria, all of the Project roads meet silvicultural exemption criteria (a): Indian River Timber Sale(s) Project roads are not connected to a community road system or a ferry system. In addition, Project Area roads meet exemption criteria (b): Existing and proposed Project roads are in an isolated location, the population of Tenakee Springs is 111 people (1997 TLRMP EIS, page 3-655) and (e): None of the Project Area roads are connected to an arterial road system. The Project Area roads are also used by small numbers of motorized vehicles throughout the year (less than 50).

FS Response

COE-4 The NWI maps were not exclusively used to identify wetlands, but were used as base maps. The Soils, Water and Fish sections of the Draft EIS have been clarified to display the process that was used to map Project Area wetlands to the Corps of Engineers' satisfaction.

COE-5 Members of the Indian River Interdisciplinary Team and Ralph Thompson from the Corps of Engineers met in Sitka on February 26, 1998 to review and discuss the COE comments. We provided additional information to the COE, including updated road and unit cards, and a map displaying acres and road segments deleted, deferred, and added to the unit and road pool. The map is located in the Indian River Timber Sale(s) Project Planning Record.

- **Wetland Mapping:** For Corps-regulated activities, the standard for delineation of wetlands is the Corps of Engineers, Wetland Delineation Manual (1987), including any supplemental guidance or subsequent revisions. The Corps' policy is to verify all preliminary jurisdictional determinations or jurisdictional determinations done by anyone other than the Corps, to assure the work is consistent with the 1987 Wetland Delineation Manual. Valid sources of information, such as the NWI maps, the Tongass National Forest Resource Inventory, plant association data, or the Classification and Delineation of Wetlands Using Soils and Vegetation Data, Tongass National Forest (DeMeo, et.al. 1989), are suitable for supporting one or more wetlands criteria (soils, vegetation, hydrology) at the start of the National Environmental Policy Act process. The level of information provided to the Corps for the King George Timber Sale (December 1996) was a good example that met Corps expectations for wetland mapping for exempt activities.

COE-4

Wetland mapping for this project is based entirely on the NWI maps. Since NWI maps are prepared primarily by stereoscopic analysis of high altitude aerial photographs, and wetlands are identified on the photographs based on vegetation, visible hydrology, and geography, the photographs typically reflect conditions during the specific year and season when they were taken, and there is a margin of error inherent in the use of aerial photographs. Field verification of a site may result in a revision of the wetland boundaries established through photographic interpretation. In addition, some small wetlands and those obscured by dense forest cover may not be identified on NWI maps. In this regard, the use of NWI maps exclusively to identify wetlands is inconsistent with the WDM.

- **Clean Water Act BMP Compliance:** We have reviewed the proposed specified and temporary roads in terms of the Clean Water Act BMPs, which require, in part, that discharges into wetlands shall be avoided if practical alternatives exist. Since the DEIS wetland mapping is based on the NWI, which does not provide sufficient information concerning the geographic location of wetlands within the project area, we are unable to concur that your project avoids and minimizes road impacts to wetlands to the maximum extent practicable. In this regard, additional wetland mapping information is required. We would appreciate receiving wetland mapping prepared in accordance with the WDM for our verification. Alternatively, supplemental supporting information, such as field data sheets including sampling points, ground and aerial photography, wetland identification using the DeMeo/Loggy wetland classification method, soil mapping, and/or any other valid sources should be provided. If you are unable to provide this information, we will prepare a final wetland delineation for your

COE-5

COE-5
(cont.)

project, within the constraints of our resource allocations. It should be understood that an onsite inspection by this office may be required prior to our making the final wetland delineation.

- **Stream Crossings:** BMPs ii, iii, iv, and vii address requirements for meeting the Clean Water Act 404(f)(1)(e) exemption for silvicultural roads, concerning work in the vicinity of streams. Table 3-6 indicates that a number of the existing drainage structures within the Indian River, Freshwater Creek and 10-mile Creek areas have failed or are in poor condition, and that 19 road sites with erosion have been identified. In addition, Table 3-9 identifies a number of existing Class I and Class II stream crossings/drainage structures that are fish passage barriers. Appendix II of the Indian River Watershed Analysis identifies remedial work required at specific crossings, but does not indicate whether corrective action has been scheduled.

COE-6

Based on this information, the above crossings and eroding road areas are not in compliance with Clean Water Act Section 404 (f)(1)(e) BMPs (iv) and (vii), and corrective action is required. Since the impacts to aquatic resources are ongoing, all required remedial action should be prioritized and completed during the 1998 construction season. It is the Corps' responsibility to ensure compliance with these BMPs. Our objective is to work with the U.S. Forest Service to obtain your voluntary compliance.

COE-7

- **Road Closure:** Appendices I and J (Project Road Cards and Harvest Unit Cards) designate recreation as "not applicable" for all roads and harvest units. However, Appendix D reflects that public/recreation use would be encouraged on a number of existing and proposed roads through appropriate signing, public notification and active maintenance of the road prism. Appendix D indicates that Proposed Roads 7500, 75007, and 7502 would encourage public/recreation use after timber harvest, and that no additional timber exists for which Road 75007 will be needed in the future.

COE-7a

Roads which are constructed or upgraded in waters of the U.S., including wetlands, which would appreciably improve or encourage motorized access to areas used for subsistence harvesting of resources or recreation would not be for the sole purpose of silvicultural activities and would require DA authorization. Alternatively, effective physical barriers to motorized public access, such as gates, tank traps, removal of drainage structures, etc. are some indications of sole use, although monitoring and maintenance is required to ensure that closure methods are effective. (Reference the Clean Water Act 404(f) Exemptions section above for additional clarification on this issue.) We have determined based on the available information, that

FS Response

COE-6 The Purpose and Need section in Chapter 1 stated in part, "timber harvest infrastructure (roads, log transfer site, rock quarries) are in place or in need of maintenance to reduce potential resource damage" (Emphasis added). Road maintenance needs identified in the EIS may be accomplished as part of the timber sale contract. In addition, other potential funding sources (force account, 10 percent road fund, etc.) have been secured to maintain these roads sooner. We will continue to work with the Corps of Engineers regarding compliance with Clean Water Act and other Federal laws.

COE-7 Post-harvest Public/Recreation Traffic Strategies used to control traffic are displayed in Appendix D. Alternative B uses "encourage" or "accept" strategies to meet management objectives. In all other action alternatives (C-F), "discourage" or "eliminate" strategies are used to meet management objectives. The different Road Management Objectives provide the responsible official with a range of alternatives to choose from.

Other Project Area roads besides 75007 were identified that have no known additional commercial timber for which road access will be needed in the future. All of these roads were given a Maintenance Level 1 designation (See Appendix D for additional information).

COE-7a Refer to response COE-3, COE-4, and COE-5.

portions of the referenced roads that would be constructed in waters of the U.S., including wetlands, would require DA authorization. In this regard, you would need to include a description of fill quantities and types, detailed plan and section drawings and a location map depicting the above roads, in your DA permit application.

- Log Transfer Facilities (LTF): Page 3-60 of the DEIS indicates that one former and two proposed LTFs have been identified as alternatives for the project. Corps authorization is required under all alternatives for the discharge of dredged or fill material below the high tide line (extreme high water) or in wetlands, and for the construction of structures in navigable waters. In this regard, your DA permit application would need to include appropriate plans depicting all work requiring DA authorization, and specify the quantities and types of fill material proposed to be discharged below the high tide line and the quantities and types of material proposed to be excavated, in areas subject to Corps jurisdiction. Your plans should also reflect any other work proposed in waters of the U.S., including wetlands, such as floating walkways, logging camps, outfalls, intakes, captive barges, log rafting areas, sort yards, etc. Wetland mapping prepared in accordance with the WDM is required for areas impacted by project components requiring DA authorization, (e.g., land-based camps, sort yards, LTF access roads, trail relocation under Alternative F, etc.) in accordance with draft 404(f) Guidelines being developed by the U.S. Forest Service, the Environmental Protection Agency, and the Corps. In addition, authorization from the Environmental Protection Agency would also be required for the transfer of logs into marine waters under National Pollutant Discharge Elimination System Section 402 permit requirements.

- DA permit evaluation: Impacts to waters of the U.S. should be a major consideration during your review of alternatives with regard to both meeting the Federal BMPs, and for those project components which would require individual Section 10 of the Rivers and Harbors Act of 1899 or Section 404 of the Clean Water Act authorization. For wetland development proposals requiring Corps authorization, Corps permits are available only for projects which clearly demonstrate compliance with the Clean Water Act Section 404(b)(1) guidelines, which state that no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, as long as the alternative does not have other significant adverse environmental consequences. In those cases where a non water-dependent activity associated with a discharge is proposed for a "special aquatic site",

COE-8 Reference to these authorizations, permit requirements, and plans was made in Chapter 1 and again in Chapter 4 of the Draft EIS.

COE-9 The Soils, Water and Fish sections of the Draft EIS have been clarified to show that alternatives to impacting wetlands have been considered, but that no practicable alternatives exist, and that the impacts have been mitigated to the greatest extent possible.

COE-9
(cont.)

such as wetlands, practicable alternatives are presumed to exist unless clearly demonstrated otherwise. An alternative is considered practicable if it is available and capable of being accomplished after taking into consideration costs, existing technology and logistics in light of overall project purpose.

Enclosed is a copy of our Regulatory Program Applicant Information pamphlet, which includes a permit application. This pamphlet is designed to assist you in applying for a DA permit and provides general information and guidance on how to complete the permit application.

We appreciate the opportunity to review this DEIS, and look forward to continued coordination for this and future timber sales. We are available for further discussion or clarification of our comments, as necessary. Please contact me at the letterhead address, by telephone at (907) 790-4490, or by FAX at (907) 790-4499 if you have any questions concerning our requirements.

Sincerely,



Ralph W. Thompson
Field Office Manager

Enclosures

Section 404 of the Clean Water Act Exemptions
Best Management Practices for Forest Road Construction
33 CFR 323.4(a)(6)

33 CFR 323.4(a)(6), identifies Best Management Practices (BMPs) which must be met in order to claim an exemption from Section 404 permitting requirements for forest roads which are constructed for the sole purpose of silvicultural activities.

Permanent roads, temporary access roads, and skid trails in waters of the US shall be held to the minimum feasible number, width, and total length consistent with the purpose of specific farming, silvicultural, or mining operations, and local topographic and climatic conditions;

ii. All roads, temporary or permanent, shall be located sufficiently far from streams or other water bodies (except for portions of such road which must cross water bodies) to minimize discharges of dredged or fill material into waters of the U.S.;

iii. Road fill shall be bridged, culverted, or otherwise designed to prevent the restriction of expected flood flows;

iv. Road fill shall be properly stabilized and maintained during and following construction to prevent erosion;

v. Road fill shall be made in a manner that minimizes encroachment of heavy equipment within waters of the U.S., (including adjacent wetlands) that lie outside the lateral boundaries of the fill itself;

vi. Vegetative disturbance in waters of the U.S. shall be kept to a minimum;

vii. Road crossings shall not disrupt the migration or other movement of those species of aquatic life inhabiting the water body;

viii. Borrow material shall be taken from upland sources whenever feasible;

ix. The discharge shall not take, or jeopardize the continued existence of a threatened or endangered species as defined under the Endangered Species Act, or adversely modify or destroy the critical habitat of such species;

x. Discharges into breeding and nesting areas for migratory waterfowl, spawning areas, and wetlands shall be avoided if practical alternatives exist;

xi. The road fill shall not be located in the proximity of a public water supply intake;

xii. The discharge shall not occur in areas of concentrated shellfish production;

xiii. The discharge shall not occur in a component of the National Wild and Scenic River System;

xiv. The road fill shall consist of suitable material free from toxic materials in toxic amounts;

xv. All temporary fills shall be removed in their entirety and the area restored to its original elevation.

FS Response

January 20, 1998
Lynn Shipley, Team Leader
USDA Forest Service
Tongass National Forest, Chatham Area
204 Siginaka Way
Sitka, AK 99935

Dear Ms. Shipley:

I visit Tenakee during the purse seine season and have enjoyed vacations at my parent's cabin at Columbia Cove in Tenakee Inlet. My husband subsistence hunts for deer in Tenakee Inlet every fall. I am very disappointed in the alternatives presented for the Indian River Timber Sale. I realize if I choose the "no action" alternative that I am essentially throwing my vote away, since it doesn't suit the Forest Service's purpose and need for the sale.

CR-1

CR-2

All the remaining alternatives (B, C, D, E, & F) will damage economic, recreation, and subsistence opportunities for Tenakee residents and visitors.

Economic Values

Visitors to Tenakee are looking for a wilderness experience which will be severely impacted by Alternatives B-F. The proximity and scale of the logging will negatively impact the Tenakee businesses which serve the visitor industry. Years ago I was visiting Tenakee when I woke up to the sounds of helicopters and trucks from Corner Bay. While walking the beaches on East Point I could hear the rumble of logging trucks which detracted from the experience. Those negative impressions are passed on from visitor to visitor which results in a long term impact to Tenakee. In determining impact to recreation/tourism income you need to look at cumulative effects and also forthcoming timber sales in the Tenakee area like Finger Mountain. With the alarming amount of area in Tenakee Inlet slated for timber production under the new TLMP will there ever be a time when there won't be noise and visual disturbances?

CR-3

CR-4

To say that "recreation/tourism income would likely to return to pre-sale levels following harvest" seems naive. Tenakee could develop a reputation like Prince of Wales Island for being an area that has been extensively logged and has little appeal for visitors. The DEIS states that "The noise disturbance is expected to last three to five years, and these people may not return to the area for this whole period. They may also influence new people by not recommending Tenakee Springs as a place to visit because of the noise and visual disturbance." The Forest Service needs to more carefully consider the impacts on the economy of Tenakee for the long term and not minimize the negative effects on the recreation/tourism economy. Collaborative stewardship with the citizens of Tenakee would probably point out the very obvious problems with the extensive clearcutting planned for Tenakee Inlet.

CR-5

CR-6

CR-1 The NEPA process is not a vote for or against a project proposal. You may choose any alternative you wish to support or not support. To be most useful, your comments should be as specific as possible.

CR-2 Refer to the Economics and Social Values, Recreation, and Subsistence sections in Chapter 4 for impacts to these resources.

CR-3 Refer to Response TK-4. It is unrealistic to expect a "wilderness experience" on land designated as a Timber Production LUD (such as land near Tenakee Springs).

CR-4 Cumulative effects, including the Finger Mountain Timber Sale Project, were included in the cumulative effects analysis. Refer to Response SEACC-20. A copy of your letter has been given to the Finger Mountain Interdisciplinary Team.

Currently, the sounds of commercial airplanes bringing passengers, cargo, and mail to Tenakee Springs may be heard everyday, weather permitting, in Tenakee Inlet. Commercial jets fly over Tenakee Inlet everyday, weather permitting. Rescue helicopters use the landing pad built for that purpose in Tenakee Springs, when necessary. The city owned generator runs 24 hours a day, seven days a week, twelve months a year. Commercial fishing boats, pleasure boats, and the Alaska Marine Highway ferries ply the waters of Tenakee Inlet. These and other noises will always be a part of Tenakee Inlet. Noise and visual disturbance from timber management activities will sporadically occur in Tenakee Inlet for at least the life of the modified 1997 Forest Plan (10-15 years).

CR-5 Impacts to Recreation resources, including tourism, are in Chapter 4.

CR-6 "Alternatives to Traditional Clearcutting" was an issue that was addressed in the EIS. Also, refer to Response CTS-4.

FS Response

CR-7 The description of the East Tenakee Trail as recreational is misleading. I have walked that trail from my parent's cabin to the town of Tenakee out of necessity. It is an important link between residents of East Tenakee and the town itself. When the weather is too extreme to take a boat or if a boat is not available, residents need to be able to use the East Tenakee Trail. I will be discouraged from using the East Tenakee Trail as a transportation route because of the proximity of logging activities to the trail.

Karst

CR-8 I wonder why the Forest Service contracted out the survey of karst areas and didn't use Forest Service personnel experienced with karst in the Tongass. I oppose roads being built through areas of high vulnerability karst such as road number 7500, 75003, 75004, 7502, and 75028, and logging on Units 4012, 4120, 4420, 4440, 4620, 4710, 4910, 5010, 5011, 5020, 5040, 5080, 5220, 5840, 21010, 21310, 21610, 21711, 21811, 21820, 21830, 21840, 60420, 60810, 60910, 63820, 63850, with moderate to high vulnerability.

Subsistence

CR-9 During the past four years my yearly supply of deer has come from the annual trip my husband makes to Tenakee. He has used the Indian River area for subsistence hunting as well as other areas in Tenakee Inlet slated for timber production. Alternatives B-F will negatively affect his ability to subsistence hunt for deer and provide deer for our family. Continued timber harvest in Tenakee Inlet will increase pressure on the deer population which will negatively impact the residents of Tenakee who rely heavily on surrounding areas for subsistence. I can't support Alternatives B-F because of the extensive use of clearcutting as a harvest method and the cutting of old-growth forest which Tenakee relies on for deer habitat.

Road Construction

CR-10 I oppose any alternatives which include road construction which would bring the Indian River Road and Game Creek Road closer together.

Sincerely,

Clarice Reid
506 O'Cain Street
Sitka, AK 99835

CR-7 Refer to Response CTS-13. It is your choice to use or not use the trail when timber management activities are occurring in the area.

CR-8 Forest Service personnel performed some karst and cave surveys on Chichagof Island in 1994. Forest Service personnel experienced in karst surveys were not available in 1995. However, funding was available, so a contract was prepared to get the job done.

Refer to Response TCP-3 and Response CRM-5.

CR-9 Impacts to deer are in the Wildlife and Subsistence sections in Chapter 4.

CR-10 Refer to Response ADF&G-9.

Lynn Shipley, Team Leader
USDA Forest Service
Tongass National Forest, Chatham Area
204 Siginaka Way
Sitka, AK 99835

1-11-98

To: Indian River EIS Team,

Please include my comments on the Indian River Timber Sale DEIS as part of the official record of comments. Comments:

- CRM-1** 1. Recommend a smaller scale approach with selective cutting as there is no justification for such a large scale operation.
- CRM-2** 2. Adamantly opposed to new road construction, especially the new road which would bring the Hoonah road system so close to the Indian River road system.
- CRM-3** 3. Need to address the long term, cumulative effects of past, present and future timber sales including the Finger Mountain sale.
- CRM-4** 4. Need to make a plan with little to no impact on deer population and other subsistence resources.
- CRM-5** 4. Should not be logging on karst terrain.
- CRM-6** 5. Need to provide sustained availability of high quality timber for local small scale manufacturing.
- CRM-7** 6. The East Tenakee Trail is much more than a "recreational use trail". Many people including myself use the trail to walk to our homes in East Tenakee.
- CRM-8** 7. No need for two log transfer facilities at (at 10 mile spit and the log dump east of Tenakee).

Thank you for allowing my comments. Please take them into account when developing the final EIS.

Sincerely,

Craig R. Mapes
Craig R. Mapes
PO Box 210901
Auke Bay, AK 99821

FS Response

CRM-1 Refer to the Other Issues section, Small Timber Sales portion in Chapter 1.

CRM-2 Refer to Response ADF&G-9.

CRM-3 Refer to Response SEACC-20. Also, a copy of your comment letter has been given to the Finger Mountain Interdisciplinary Team.

CRM-4 The alternatives provide "little to no impact" on deer populations and other subsistence resources. Refer to the Wildlife and Subsistence sections in Chapter 4.

CRM-5 The modified 1997 Forest Plan Forest-wide standards and guidelines provide for timber management activities on low and moderate vulnerability karst. The standards and guidelines also provide for the removal of karst lands found to be of high vulnerability from the commercial forest lands suitable land base (modified 1997 Forest Plan, page 4-19).

CRM-6 Refer to the second part of Response TK-1.

CRM-7 Refer to Response CTS-13.

CRM-8 The alternatives provide a reasonable range of LTF sites.

CRM-9 Your comments will be considered in developing the Final EIS.

City of Tenakee Springs
RESOLUTION 98-15

In the Council
December 18, 1997

Introduced by
Nicholas Olmsted

A RESOLUTION FOR THE CITY OF TENAKEE SPRINGS, ALASKA
CONCERNING THE DRAFT ENVIRONMENTAL IMPACT STATEMENT
FOR THE USDA FOREST SERVICE PROPOSED INDIAN RIVER TIMBER SALE(S)

CTS-1

WHEREAS, the USDA Forest Service has proposed timber sale(s) in an area defined as the Indian River Project Area on Chichagof Island of the Tongass National Forest, and

WHEREAS, the Indian River Project area surrounds the City of Tenakee Springs, the Indian River Road crosses City boundaries, the proposed log transfer facility (LTF) at Sunny Cove involves the use of patented tidelands that belong to the City of Tenakee Springs, and many aspects of the proposed action will have immediate and lasting impacts on the community of Tenakee Springs; and

WHEREAS, the USDA Forest Service has prepared a Draft Environmental Impact Statement (DEIS) regarding the proposed Indian River Timber Sale(s) and solicited public comments; and

WHEREAS, review by members of the City of Tenakee Springs Natural Resources Advisory committee and other residents of Tenakee Springs finds the DEIS deficient in the following areas, which are discussed in detail in the attached narrative.

1. The DEIS does not adequately document a purpose or need for the proposed project, and the representation of market demand for Tongass timber is fundamentally flawed
2. The DEIS does not adequately acknowledge or publish the existing Memorandum of Understanding between the City of Tenakee Springs and the USDA Forest Service of November 12, 1996 (MOU) regarding use of city-owned tidelands at Sunny Cove as an LTF, and fails to acknowledge an important provision of the MOU in which the Forest Service agrees that use of the Sunny Cove Tidelands is conditioned on the fact that no LTF is developed at 10-Mile Creek or any other site in Sunny Cove.
- 3 The failure of the DEIS to adequately portray the aforementioned MOU indicates that the Forest Service has failed to follow the direction outlined in the revised Tongass Land Management Plan (TLMP) Record of Decision (ROD) regarding "collaborative stewardship".

FS Response

CTS-1 The City of Tenakee Springs Resolution 98-15 had their comments attached. Responses to these comments follow.

4. The DEIS fails to adequately disclose and evaluate the long term, cumulative impact of past, present and reasonably foreseeable timber sales in Tenakee Inlet.
5. The DEIS fails to disclose and evaluate the cumulative impacts of simultaneous logging operations (i.e. Finger Mountain) in Tenakee Inlet, particularly with regard to marine traffic and operation of log transfer facilities with respect to related impacts on tourism, sport and commercial fishing, recreation and the marine environment.
6. The DEIS fails to consider a reasonable range of alternatives, and all action alternatives are based on large-scale logging operations with the "range" from 24-36 million board feet.
7. All action alternatives considered in the DEIS provide timber in excess of market demand while significantly affecting availability of subsistence resources.
8. All action alternatives would result in unacceptable loss of wildlife habitat.
9. All action alternatives would result in unacceptable levels of helicopter noise in residential areas of Tenakee Springs.
10. All action alternatives are incompatible with current use of the existing Indian River Road by local hunters, tourists, and recreationists.
11. The DEIS acknowledges that all action alternatives except D will have an adverse impact on current Guided Recreation income of Tenakee residents, and fails to justify or mitigate for that loss.
12. The DEIS fails to acknowledge that use of the East Tenakee Trail is not limited to "recreational" hiking, or to ensure unrestricted safe access to residents who use the trail for basic transportation.
13. All action alternatives except E; propose construction of roads that would bring the Indian River Road within 3/4 mile of connection with the Game Creek Road, creating a de facto connection for ATV traffic and violating the Tongass Timber Reform Act's prohibition of engaging in further efforts to connect the City of Tenakee Springs with the logging road system on Chichagof Island. Alternative E brings the Indian River Road within approximately 1 1/4 miles of the Game Creek Road.
14. The DEIS violates the National Forest Management Act and the National Environmental Protection Act because all action alternatives include the construction of additional miles of permanent roads in the project area while the DEIS fails to disclose the Forest Service long term transportation plan for Tenakee Inlet.
15. All action alternatives ignore the standards and guidelines for karst terrain as defined in the Tongass Land Management Plan Revision (TLMP) by proposing logging in areas of high vulnerability karst and proposing construction of new roads across karst terrain without disclosing and evaluating whether other options are available or whether karst resource values will be compromised.
16. The DEIS fails to adequately identify the [REDACTED] which is clearly a


significant cave under the Federal Cave Resources Protection Act and has been nominated as such.


17. The DEIS fails to address Tenakee's frequently repeated request for a community development reserve that will assure a supply of high quality timber to be available locally in perpetuity.

THEREFORE BE IT RESOLVE that the Common Council of the City of Tenakee Springs, Alaska, hereby adopts the attached comments on the DEIS for the proposed Indian River Timber Sales and concludes that the only alternative acceptable to the City of Tenakee Springs is Alternative A, the "no-action" alternative.

BE IT FURTHER RESOLVED that if the U.S.D.A. Forest Service proceeds with this proposed project, new alternative(s) be developed to address the concerns identified by this resolution and other public comments.

ADOPTED 5 YES, 2 ABSENT THIS 18th DAY OF DECEMBER 1997


Shelly P. Wilson
City Council Vice President
ex-officio VICE-MAYOR

ATTEST:

Mary M. Almy
Acting City Clerk

FS Response

COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STUDY FOR THE PROPOSED INDIAN RIVER TIMBER SALE(S) TO ACCOMPANY CITY OF TENAKEE SPRINGS RESOLUTION 98-15

1. The DEIS does not adequately document a purpose or need for the proposed project, and the representation of market demand for Tongass timber is fundamentally flawed.

The DEIS states (Chapter 1- Page 3) that the Indian River Sale(s) Project is proposed at this time to respond to the following goals and objectives:

- "1. improve timber growth and productivity on suitable timber lands made available for timber harvest, and manage these lands for a longterm sustained yield of timber.
2. contribute to a timber supply from the Tongass that seeks to meet annual and Tongass Land Management (TLMP) planning cycle market demand; and
3. provide opportunities for local employment in the wood products industry, which in turn contribute to the local and regional economies of Southeast Alaska."

Reading the DEIS plans to accomplish goal #1 in the proposed project gives reviewers a sense of having stepped into a time machine. Just like twenty years ago, the Forest Service is claiming a duty to convert the Tongass from old-growth forest of predominately hemlock to even aged second growth. The only change is that the term "eliminating decadent old growth" appears to have been dropped in favor of "creating a more diverse species mix" of spruce and yellow cedar. It is interesting that the Forest Service thinks it will be possible to force regeneration of yellow cedar in the project area, while elsewhere in the Tongass silviculturists are baffled by an overall decline of that species. It is also interesting that in the past yellow cedar was exported in the round, which was justified by claiming it had "no commercial value" in this country. Now it has become reasonable, at least to the Forest Service, to justify cutting old growth at a loss because yellow cedar might grow back.

Local woodworkers have raised strenuous objections to this flawed reasoning many times in the past. There is simply no replacement for large diameter, knot free, even grained old growth regardless of species. To contend that a knotty, wide - grained pole of second-growth spruce is more desirable than old-growth hemlock is simply ridiculous to anyone knowledgeable about fine woodworking.

The most recent forecast of demand for timber from the Tongass National Forest by D. Brooks and R. Haynes, Timber Products Output and Timber Harvests in Alaska: Projections for 1997-2010, projects low (96 mmbf), medium (113 mmbf) and high (130 mmbf) scenarios for demand for Tongass wood products over the next five years. The Indian River DEIS (Chapter 1, Page 4) erroneously

CTS-2 The quotes in your comments have been taken out of context; the EIS states that these quotations are modified 1997 Forest Plan Forest-wide goals and objectives. These goals and objectives need to be considered in their entirety, not singled out as a stand alone purpose.

Yellow cedar is regenerating in harvest units on the Tongass National Forest. The Forest Service is also planting yellow cedar to ensure that harvest units are adequately stocked as required by the National Forest Management Act. Determining the abiotic factors that cause or contribute to old-growth yellow cedar decline was included in the modified 1997 Forest Plan as an information need (Appendix B, page B-7). Yellow cedar may be exported from Alaska with a permit if there is no processing capability or purchasers for the logs in Alaska (Refer to the export policy issued March 27, 1998). The Forest Service is not justifying cutting old-growth timber "at a loss because yellow cedar might grow back." Refer to the Purpose and Need section, in its entirety, in Chapter 1

The EIS does not contend that second growth is more desirable than old-growth. Refer to all of the modified 1997 Forest Plan Forest-wide goals and objectives (modified 1997 Forest Plan, page 2-3 to 2-4).

This EIS used the updated Morse market demand numbers from her September 1998 report. The reference to "sawtimber" has been corrected.

The timber volume numbers in the Market Demand portion of the Purpose and Need section in Chapter 1 of this EIS are not static. Each year, part of the timber volume under contract is harvested, reducing the volume under contract. Additional timber volume is sold, replacing volume that has been harvested. Other timber volume is approved through the NEPA process, making it available for sale. We are unaware of Forest Service plans to provide the timber industry with approximately 1,125 mmbf of timber in a five-year period.

CTS-2

CTS-2
(cont.)

states that "projected annual sawlog demand for the next decade is 113 mmbf for the low scenario, 133 mmbf for the medium, and 156 mmbf for the high scenario. It is important to note that the Brooks and Haynes report calculated total market demand: "these figures refer to total National Forest Harvest, including both net sawlog and utility volume." (emphasis added). The DEIS characterizes the projected market demand for Tongass timber as demand for saw timber only.

The DEIS goes on with clear evidence that the Forest Service proposes to provide Tongass Timber in excess of market demand, rather than seeking to meet market demand as directed by the Tongass Timber Reform Act. The DEIS states (C1-P4) that "as of June 30, 1997, there is 504 mmbf of unharvested timber volume under contract to the timber industry." Obviously, the Forest Service has already supplied the timber industry with nearly 5 times the estimated "medium" annual demand for Tongass timber. The DEIS continues "at this time, there is approximately 624 mmbf proposed under other ongoing NEPA analyses on the Tongass for the 1998-2002 time period." In a five year period the forest Service plans to provide the timber industry with approximately 1125 mmbf of timber. Total "medium" timber demand for Tongass Timber over the same period is expected to total 565 mmbf.

The DEIS indicates that the timber supplied to KPC under the 3-year contract closeout provisions doesn't count as timber provided to meet market demand. After acknowledging the 504 mmbf of unharvested timber under contract (Summary- P2), the DEIS states "Of this volume, however, 300 mmbf is allocated to the Ketchikan Pulp Company under the terms of the long-term settlement contract, with 204 mmbf under independent industry contract. Thus, in order to meet the intent of having a three-year supply, approximately 195 mmbf of timber needs to be cleared through the NEPA process and offered to the industry." (This is based on Forest Service projection of needing 399 mmbf for a three year supply.) We would like to know who decided that KPC is no longer part of the timber industry.

It is important to note that under all alternatives the Forest Service projects a net loss to the US treasury, and consequently taxpayers nation wide. The losses will range from ~\$160/mbf (thousand board feet) to ~\$197/mbf. (Table 4-22, C4-P36).

It is impossible to justify actively harming current, sustainable employment in Tenakee Springs (see #11) to create short term employment for imported workers and losing money to boot. It is quite clear that the City of Tenakee will derive neither short or long term benefits from this project beyond a paltry sum paid to the City government for tideland use. In fact, the DEIS acknowledges that several components of Tenakee's economy will suffer outright harm if this project is approved.

FS Response

(CTS-2, cont.) This section has been rewritten to reflect current market conditions.

Refer to the Recreation Commercial Uses portion of the Recreation section in the EIS, Chapter 4.

2. The DEIS does not adequately acknowledge or publish the existing Memorandum of Understanding between the City of Tenakee Springs and the USDA Forest Service of November 12, 1996 (MOU) regarding use of city-owned tidelands at Sunny Cove as an LTF, and fails to acknowledge an important provision of the MOU in which the Forest Service agrees that use of the Sunny Cove Tidelands is conditioned on the fact that no LTF is developed at 10-Mile Creek or any other site in Sunny Cove.

The Memorandum of Understanding between the Forest Service and the City of Tenakee Springs was the result of painstaking, protracted negotiations. A committee of Tenakee residents appointed by the Mayor of Tenakee Springs devoted an enormous amount of time and energy to develop this agreement, and every detail represents what we thought was a good-faith effort to arrive at a compromise that would permit use of the Sunny Cove tidelands and protect other values of surpassing importance to the community. A special election was held to consider the MOU, and voters endorsed it after lengthy discussion and debate. Consequently it is a shocking affront that the MOU is not published in the DEIS, and one of the pivotal points of the MOU is completely disregarded.

The MOU is mentioned in the DEIS on the following pages: Chapter 1, pages 18-19, (C1-P18-19), C2-P17-18, C4-P52, P63-64, P71-72. Some aspects of the MOU are acknowledged, however there is no mention of this statement found on page 3 of the MOU "For the duration of the MOU, the Forest Service agrees that it will not, directly or indirectly, develop or use, or permit the development or use, of alternative log transfer facility sites in connection with the Indian River Project, including but not limited to sites at Ten Mile Creek, or at other locations in Sunny Cove." In case that point needs further clarification, the "Question and Answer" sheet sent to Tenakee voters on January 13, 1997 by Sitka District Ranger Jim Franzel is equally explicit. "Q. Will any other LTF's be developed in the Project Area if Proposition One passes?" (Proposition One endorsed the MOU). "A. No. If Proposition One passes, we have agreed while the MOU is in effect, we will not develop any other LTFs for the Indian River Timber Sales(s) project."

The failure of the DEIS to even mention this agreement, and the bald-faced proposal in Alternative B of simultaneous LTF's at Sunny Cove and 10-Mile Creek is an outrageous breach of public trust.

3. The failure of the DEIS to adequately portray the aforementioned MOU indicates that the Forest Service has failed to follow the direction outlined in the revised Tongass Land Management Plan Record of Decision regarding "collaborative stewardship".

City of Tenakee Springs Resolution 98-15 COMMENTS

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FS Response

CTS-3 The Memorandum of Understanding Between the City of Tenakee Springs and the USDA Forest Service for the Short Term Use of Tenakee Springs' Tidelands at Sunny Cove was discussed in the DEIS, Chapter 1 in the Public Involvement section, in Chapter 2 in the Economics and Social Values portions of the Comparison of Alternatives by Identified Issue section, in Chapter 4 in the Recreation, Land Status, and Transportation System sections, and in Appendix C in the Sunshine Cove LTF Tidelands sections. The MOU has also been added to the appendices in the Final EIS.

The National Environmental Policy Act (NEPA) regulations require development and evaluation of a range of all reasonable alternatives that fulfill the purpose and need and address significant issues. The Proposed Action (Alternative B), that included the Sunshine Cove and 10-Mile Creek LTF sites, was described in the Notice of Intent dated November 1, 1995 before the MOU was approved by Tenakee Springs' voters in January 1997. Other alternatives (C through F) were developed and approved by the responsible official in October 1996, also before the MOU was signed. Three LTF sites were displayed, discussed, and analyzed in the EIS to provide the responsible official with a range of reasonable alternatives that fulfill the purpose and need, and address the significant issues (See Chapter 1, Issue Area 4: Log Transfer Facilities (LTFs) and Camp Location). The MOU, in and of itself, does not take the place of NEPA analysis and decision documents, although it may play a role in the final decision.

CTS-4 Collaborative stewardship commitments made in the 1999 ROD are in the process of being implemented and will continue over time through many projects.

The City of Tenakee Springs appeal of the 1997 TLRMP EIS was addressed in the 1999 ROD.

Page 8 of the City of Tenakee Springs appeal of the TIMP Revision Final Environmental Impact Statement (FEIS) and Record of Decision (ROD) raised concerns about the Forest Service efforts to implement "collaborative stewardship" as outlined in the TIMP ROD. By failing to include a copy of the MOU regarding use of City tidelands, disregarding an important provision of that agreement, and completely failing to respond to requests for a community reserve in the project area the Forest Service has shown its inability to implement this new program.

Another example: even though this timber sale has been in the planning stages for several years the Forest Service originally planned the required subsistence hearing within days of the release of the DEIS. Numerous phone calls from Tenakee residents and City Council members could not persuade the Forest Service to simply postpone the meeting to allow residents to review the document. It took an official request from the City of Tenakee Springs with the backing of federal Council on Environmental Quality (CEQ) regulations to have the Forest Service reschedule the hearing. With better planning and communication in the spirit of collaborative stewardship, that confrontation need not have occurred.

4. The DEIS fails to adequately disclose and evaluate the long term, cumulative impact of past, present and reasonably foreseeable timber sales in Tenakee Inlet.

5. The DEIS fails to disclose and evaluate the cumulative impacts of simultaneous logging operations (i.e. Finger Mountain) in Tenakee Inlet, particularly with regard to marine traffic and operation of log transfer facilities with respect to related impacts on tourism, sport and commercial fishing, recreation and the marine environment.

6. The DEIS fails to consider a reasonable range of alternatives, and all action alternatives are based on large-scale logging operations with the "range" from 24-36 million board feet.

7. All action alternatives considered in the DEIS provide timber in excess of market demand while significantly affecting future availability of subsistence resources.

The DEIS acknowledges (C4-43) a "significant possibility of a significant restriction" of subsistence use of deer in the future, due to the cumulative effects of "declining deer capability" caused by clear cuts coupled with increased demand. The DEIS notes (C4-P46) that "the Federal Subsistence Board did restrict hunting by non-rural hunters in GMU 4 in regulatory years 1991 and 1992." It is well established that the extensive cutting already done will diminish availability of deer as the second growth canopy closes. Converting still more productive

City of Tenakee Springs Resolution 98-15 COMMENTS

4

FS Response

(CTS-4, cont.) The open house and subsistence hearing originally scheduled for December 9, 1997 was postponed until January 6, 1998 based on two telephone requests and the "official request" letter referred to in the comment. This later meeting was postponed to January 13, 1998 due to inclement weather.

CTS-5 Refer to Chapter 4 in the EIS for long-term, cumulative impacts of past, present, and reasonably foreseeable timber sales in and around Tenakee Inlet.

CTS-6 The Cumulative Effects portion of the Overview section at the beginning of Chapter 4 has been edited to include the Finger Mountain Timber Sale Project. The project was considered in the various cumulative effects analyses in Chapter 4.

CTS-7 National Environmental Policy Act (NEPA) implementing regulations require agencies to consider all reasonable alternatives. A reasonable alternative is one that, among other things, meets the purpose and need for the project. NEPA provides the agency with the authority to set reasonable objectives for the project. The reasonable objectives for this project focused on timber management activities. The alternatives were developed from the issues and concerns raised during the public scoping period after the Notice of Intent to prepare an EIS was published in the Federal Register (November 1995).

CTS-8 The sentence partially quoted here actually says, "Cumulatively, there is a significant possibility of a significant restriction at some time in the future, due to an ever increasing human population and associated hunting demand and declining deer habitat capability."

The Alaska National Interest Lands Conservation Act (ANILCA) provides the continuation of the opportunity for subsistence uses by rural residents of Alaska. ANILCA does not provide for subsistence security.

Cumulative impacts to marten were considered in the Wildlife and Subsistence sections in Chapter 4. These sections have been edited to clarify these impacts.

FS Response

CTS-8
(cont.)

habitat to second growth compounds the problem.

Sacrificing future subsistence security for current below-cost sales is simply not acceptable.

While deer are the primary species important to local subsistence users, the project area is also an important area for local subsistence trappers with marten a primary target. While the wildlife section admits that marten habitat will be reduced by 8% under the preferred alternative, the DEIS fails to disclose and evaluate the cumulative effects on marten populations from past, present and reasonably foreseeable timber sales in Tenakee Inlet.

8. All action alternatives would result in unacceptable loss of wildlife habitat.

See Table 4-14, C4-P19.

9. All action alternatives would result in unacceptable levels of helicopter noise in residential areas of Tenakee Springs.

The DEIS apparently makes the erroneous assumption that all of Tenakee Springs' residential area is concentrated in the town core. In fact the residential area of Tenakee Springs runs along the shoreline for several miles in either direction. Residents with homes located east of the town core will be subjected to noise pollution 9 months of the year for 3 to 5 years. It is also likely that west Tenakee will be affected by high elevation helicopter logging directly behind town.

CTS-10

CTS-11 Roads in the Project Area were constructed primarily for timber management activities. Other uses are allowed as long as they do not interfere with the primary purpose for which the roads were constructed. There are also safety considerations during timber sale operations that are very important.

CTS-11

CTS-12 Based on interviews in the community about recreation and tourism, it was determined that the people most impacted by Alternatives B, C, E, and F would be independent travelers using the Sunshine Cove area and Indian River road. Independent travelers tend to spend less money on their trips compared to the clients of outfitter/guides. Consequently, reduced use is not directly proportional to reduced revenue.

CTS-12

11. The DEIS acknowledges that action alternatives will have an adverse impact on current Guided Recreation income of Tenakee residents, and fails to justify or mitigate for that loss.

Table 4-27 (C4-P59) projects a decrease of 17% in the "Average Days of Use by Groups Generating Recreation Tourism Income" under Alternatives B, C, E, and F. Oddly enough this 17% decrease in customers is translated as only a 2% decrease in "Income Generated". While this flawed logic demands correction, we contend that any negative affects to local income are unacceptable, particularly in light of the fact that the proposed sales will result in a loss to the federal government, and

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CTS-9 Comment noted.

CTS-10 Helicopter yarding units were designed, in part, with residents of Tenakee Inlet in mind. Refer to the alternative maps for helicopter yarding units, distance from Tenakee Springs and Inlet, and topography which will help block noise. Also, the MOU with the City of Tenakee Springs includes mitigation measures to reduce noise impacts from helicopters.

CTS-12
(cont.)

consequently the same tax payers whose income is being reduced.

12. The DEIS fails to acknowledge that use of the East Tenakee Trail is not limited to "recreational" hiking, or to ensure continuous unrestricted safe access to residents who use the trail for basic transportation.

C2-P17 "Impacts to East Tenakee Trail Use" acknowledges that "In all action alternatives, trail use could be disrupted during road reconstruction." Only the effects of noise are acknowledged for the long term, failing to recognize that dodging log trucks and traversing an LTF have other unpleasant and potentially dangerous aspects.

The East Tenakee Trail is an essential transportation corridor for Tenakee residents, who use it regularly to commute to work, school, and civic functions (including meetings with the Forest Service.) When stormy weather precludes small boat traffic, the trail is the only transportation corridor available. Consequently it is extremely offensive to find the only other discussion of potential impacts to the trail under "Recreation", with the following statement found on C4-P54 "However, other recreation opportunities exist in the area, such as the West Tenakee Trail, that could be substituted for the use of the East Tenakee Trail."

CTS-13

CTS-13 The East Tenakee Trail was included in the Transportation section in Chapter 3. Because the trail is eligible for the National Register of Historic Places, impacts to the trail are in the Heritage Resources section in Chapter 4. The MOU with the City of Tenakee Springs and the Sunshine Cove LTF Tidelands section in Appendix C describe mitigation measures designed to reduce or eliminate impacts to the East Tenakee Trail. These measures include, in part, "The East Tenakee Trail, within the road right-of-way, will be properly maintained and protected by the Forest Service against impacts that may render it impassable or difficult to use as a result of logging activities."

CTS-14 There is no intent to make the area between the 7500 (Indian River) and 8502 (Game Creek) roads traversable by ATVs or any other motorized vehicles. The Road Management Objectives (RMOs) in Appendix D for the preferred Alternative C include discouraging public/recreation use along the entire length of the 7500 road, and removing drainage structures and waterbarring that portion of the road in VCU 2041. The RMOs for the 8502 road include a gate on the last 0.16 mile of road. If these measures fail to keep ATVs or other motorized vehicles from the area, additional road blocks may be installed or bridges removed to prevent motorized vehicle access.

CTS-14

13. All action alternatives except E propose construction of roads that would bring the Indian River Road within approximately 3/4 mile of connection with the Game Creek Road, creating a de facto connection for ATV traffic and violating the Tongass Timber Reform Act prohibition of engaging in further efforts to connect the City of Tenakee Springs with the logging road system on Chichagof Island. Alternative E brings the Indian River Road within approximately 1 1/4 miles of the Game Creek Road.

Any attempts by the Forest Service to extend the Indian River road system must be viewed as an attempt to connect Tenakee Springs to the Chichagof Island road system. Section 106 of the Tongass Timber Reform Act states that the Forest Service: "shall not construct a vehicular access road connecting the Indian River and Game Creek Roads, and shall not engage in any further efforts to connect the city of Tenakee Springs with the logging road system on Chichagof Island, unless the city councils of Tenakee Springs and Hoonah both determine that the road should be constructed and so inform the Secretary (of Agriculture)." Therefore, the construction of any new roads which extend the Indian River road system closer to the Game Creek road is in direct violation of the Tongass Timber Reform Act.

CTS-15

14. The DEIS violates the National Forest Management Act and the National Environmental Protection Act because all action alternatives include the construction of additional miles of

City of Tenakee Springs Resolution 98-15 COMMENTS

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FS Response

CTS-15
(cont.)

permanent roads in the project area while the DEIS fails to disclose the Forest Service long term transportation plan for Tenakee Inlet.

15. All action alternative ignore the standards and guidelines for karst terrain as defined in the Tongass Land Management Plan Revision (TLMP) by proposing logging in areas of high vulnerability karst and proposing construction of new roads across karst terrain without disclosing and evaluating whether other options are available or whether karst resource values will be compromised.

The TLMP Revision provides Standards and Guidelines for management of karst areas, but the Indian River DEIS neglects them entirely. While C3-P9 states that under the new TLMP "karst lands found to be of high vulnerability are removed from the commercial forest lands suitable land base" the DEIS admits on C4-P4 that "all action alternatives include timber management activities on areas assessed by geology consultant, Harza Northwest, Inc., as having low, moderate, and high karst vulnerability." The unit cards found in Appendix J of the DEIS show that at least 7 units contain high vulnerability karst. This is completely unacceptable and in direct conflict with the new Standards and Guidelines.

It also appears that several roads are planned across sections of high vulnerability karst. According to Appendix I (P15) of the TLMP Revision, "small expanses of these areas may be crossed by roads to access areas where harvest is appropriate....this would only be allowed if no other route or option was available and karst resource values would not be compromised." The DEIS does not show evidence of adequate analysis to fulfill these requirements.

16. The DEIS fails to adequately identify the [REDACTED] which is clearly a significant cave under the Federal Cave Resources Protection Act and has been nominated as such.

[REDACTED] was nominated as a significant cave in 1994. The nomination was approved by the Forest Service committee that reviewed it. The unconscionable delay in formalizing this approved nomination apparently has its source in the Chatham Area office.

17. The DEIS fails to address Tenakee's frequently repeated request for a community development reserve that will assure a supply of high quality timber to be available locally in perpetuity.

Comments compiled by Molly Kemp 12-17-97

CTS-18**FS Response**

CTS-15 Consideration of a long-term transportation plan for Tenakee Inlet is outside the scope of this project specific EIS.

CTS-16 The high vulnerability mapping completed by Harza Northwest, Inc. under contract to the Forest Service has been refined to more clearly show the areas of high vulnerability. These areas (approximately 85 acres) have been deleted from the timber harvest units.

TLRMP will be provided with an Indian River karst high vulnerability map to remove these areas from the suitable timber base.

The Final EIS contains additional discussions regarding roads on karst topography as suggested in the comment.

CTS-17 The Forest Supervisor has determined that all of the nominated caves on the Chatham Area are significant. The determination was made in a letter to the nominating organization dated February 17, 1998. A copy of this letter was sent to the City of Tenakee Springs on February 26, 1998.

The name of the significant cave in the comment has been blacked-out in order to maintain confidentiality as required by the Federal Cave Resources Protection Act.

CTS-18 We are unaware of repeated requests from the City of Tenakee Springs for a community development reserve. A review of our notes and input for the Indian River and Finger Mountain scoping meetings do not have any mention of this term or even the concept. A review of the modified 1997 Forest Plan and EIS public comment from Tenakee Springs did not find any reference to this concept either.

A "community development reserve" would be a land allocation. Land allocations are determined at the forest land management planning level; therefore this request is outside the scope of this project specific EIS. A copy of your comments has been forwarded to the Tongass Land Management Planning Team for consideration in the amendment or next revision process.

FS Response

D&LF-1 Comment noted.

D&LF-2 Refer to the Alternatives Eliminated from Detailed Study section in Chapter 2.

> From: D & L Woodworks <dnlwoods@seaknet.alaska.edu>
> To: /s=indianriver/oul=r10f03a@hs-fswa.attmail.com
> Subject: EIS Indian River Timber Sales
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>
> D&L Woodworks
>
>
> P.O. Box 397
>
> Hoonah, AK. 99829
>
> 907-945-3401
>
>
> Forest Supervisor
> Tongass National Forest, Chatham Area
>
Attn: Indian River EIS

D&LF-1

Dear Sirs;
The Forest Service current plan to remove the timber from Sunshine Cove and 10 mile creek is unacceptable and a waste of federal employees time , wages and most of all are precious tax payers dollars. Because SEACC, SIERRA CLUB LEGAL DEFENSE FUND, residents of Tenakee will definitely use every thing within there means to tie this proposal up in court, if this should happen the forest service personal who allowed this to happen, will be reported to the Tax payers watch dog agency and the general accounting offices and should be held financially accountable for this lose of tax payers money!!!.

To make these sales profitable,we recommend that you re -design the sale and connect the Indian River road system 7500 with the Upper Game Creek road system 8502 and take the timber to the Long Island LTF near Hoonah, or connect the 7500 road to the Freshwater bay system via the 85082 or 85083 road and take the timber out of the Kennel Creek LTF. The advantages of this plan would allow the Hoonah Ranger District to become involved and administrate, field work for this sale avoiding costly expences,(such as flying , housing, bargaining , personal and equipment to a remote site), that are totally unnecessary. Hoonah Ranger District could do future management for this part of our forest. This is a logical conclusion. Hoonah already has the means and the knowledge needed to insure that every bit of timber harvested will be utilized to the fullest potential allowed by the log, including qualified log scalers qualified log buyers and already the general knowledge of what is involved to move a log or lumber to market Hoonah has the ability to do all that is needed as far as logs go, and most of all Hoonah supports logging and knows that it (logging) is a important part of our community so unlike Tenakee, who doesnot support nor do they want logging and they are intitled to there opinions as we our intitled to ours.'To preserve the isolated nature of Tenakee Springs and to comply with that section of the TTRA which mandates that the City of Hoonah and the City of Tenakee Springs not be connected by road, that sections of the 7500 road between the junction of the 7501 road and the municipal boundary of Tenakee Springs be

D&LF-2

D&LF-3

obliterated by the removal of all bridges and culverts in that sections. This would still enable the residents of Tenakee Springs to use the drainage for hunting, hiking, sightseeing, ect.. We also recommend alternative C with reduce levels of helicopter logging vs. highlead, shovel logging.

Sincerely Daniel & Lori Fanning

FS Response

D&LF-3 Logging systems (cable, shovel, helicopter) were designed by an experienced logging system specialist with the harvest system, topography, and other resource needs in mind.

January 14, 1998

Forest Supervisor
Tongass National Forest: Chatham Area
Attention: Indian River EIS
204 Siginaka Way
Sitka, Alaska 99835

Dear Gary:

As a long time resident of Tenakee Springs I am pleased to take this opportunity to oppose, unequivocally, the Indian River Timber Sale.

I have seen the impact of over logging in the Tenakee Inlet area as well as the Indian River area in the pastEnough is enough already!! As I have said in the past leaving the forest as in tact as possible is of utmost importance to Tenakee residents and most forest users. My family and my neighbors depend of the forest as a viable eco system for our livelihoods...whether it is for hunting or fishing subsistence use, tourism, professional guiding or commercial fishing the Tongass is worth more to us as living trees than stumps.

I have been away at graduate school for just over a year now but it is my understanding that the USFS does not need this sale to meet market demand, that there is no real market for utility logs at present and that Keith Walker of Whitestone Logging has had to apply for a round log export permit to find a market for logs he is presently cutting. Why, pray tell, is the USFS proposing this Indian River Timber Sale? Is it to help fulfill the vow that Craig Courtright made many years ago to have Tenakee Inlet completely clearcut?

Three of the five alternatives do not meet the conditions of the MOU between the City of Tenakee Springs and the USDA Forest Service. I was a part of the committee that worked with the Forest Service to come up with this agreement. I know how many hours went into the MOU before I left for school, so I can imagine what went into it after I left; to have the Forest Service blatantly ignore that hard won agreement brings back some rather unpleasant memories of past dealing with you all. What happened to the "Kinder gentler Forest Service" that you promised us when you became Forest Supervisor?

I am also shocked at the extensive road system that the DEIS has planned for this sale. The road would come to within less than a mile from the Game Creek Road/Hoonah Road system. ATV drivers being what they are this would, for all intents and purposes, join the two road system, something specifically forbidden in the Tongass Timber Reform Act.

DMZ-1

DMZ-2

DMZ-3

DMZ-4

DMZ-5

DMZ-6

FS Response

DMZ-1 Comment noted.

DMZ-2 Comment noted.

DMZ-3 Refer to Response TK-5.

DMZ-4 Refer to the Purpose and Need section in Chapter 1. We have no record of such a statement from District Ranger Craig Courtright.

Refer to the modified 1997 Forest Plan for management prescriptions, standards and guidelines, and land use designation map for additional information regarding National Forest management in and near Tenakee Inlet.

DMZ-5 Refer to Responses ES-4 through ES-8 and ES-10.

The Forest Service is committed to improving communication by working collaboratively with local communities.

DMZ-6 Refer to ADF&G-9.

All of the proposed alternatives in the DEIS (except of course Alternative A) call for LOTS of logging and do not offer a true full range of alternatives. I feel that the timber in the Indian River Area should be set aside as Community Development Reserves, to be used for small (read minute) sales for local use.

There is absolutely no justification for this timber sale. I support Alternative A, NO ACTION.

Sincerely,

Diane C. McCarty (Ziel)

Diane C. McCarty (Ziel)
PO Box 44
Tenakee Springs, Alaska 99841

FS Response

DMZ-7 Refer to Response SEACC-8.

DMZ-8 Refer to the Other Issues section, Small Timber Sales portion in Chapter 1 and the second paragraph in Response TK-1.

DMZ-9 Comment noted.

PO Box 505
Tenakee Springs, Alaska 99841
January 19, 1998

Linn Shipley, Team Leader
Indian River Planning Team
Tongass National Forest, Chatham Area
204 Signinaka Way
Sitka, AK 99835

Dear Mr. Shipley,

For nearly 20 years I have lived in Tenakee Springs where my family and I own and operate a general store, fuel dock, liquor store, laundromat, and rental cabins. The recent Indian River DEIS raises some serious concerns for businesses in Tenakee.

From Forest Service documents* I learn that we can expect a decrease of tourist dollars during the logging of the Indian River Sale area due to competition for the Indian River road by "recreation users and the logging operators". As your documents point out, many folks coming to Tenakee are weekend visitors from Juneau and the "disturbance of wildlands visual resource" and noise level in Sunny Cove may effect the number of clients during the harvesting. When the logging is completed we can not expect things to be much better, for "in the long term the disturbances of landscape from harvesting could cause a decline in recreation tourist dollars for the community".

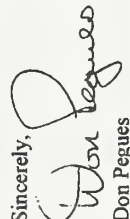
My observation is that logging camps primarily employee individuals from out of state. Camps are self-sufficient with freight is flown in and fuel barged in directly to the camp. Our business may expect some small economic gain in the near term, but the long term losses due to lost economic opportunity for our primary local customers would seem to far out weigh them.

There has been some recent interest among local business and crafts persons in creating businesses that would capitalize on the unique qualities of old growth wood. I see this type of long term economic growth being of more value to the community than any short-term benefit, which may or may not be derived from the sale currently being planned.

The Draft EIS presented fails to show this sale meets the requirements of Purpose and Need as defined under NEPA. The Forest Service currently has twenty percent more timber contracted or being prepared for sale than it's stated volume goal. Similar timber sales, such as Humpback/Gallagher, are providing no economic benefit to either the United States or the timber purchaser. Even though the timber was purchased for an average \$2.58 per thousand, the operator has been unsuccessful in finding a market and has requested round log export permits. It seems to me this timber sale should be shelved and some real alternative investigated. I support the no action Alternative A.

Thank you for this opportunity to record my comments.

Sincerely,


Don Pegues

*Nelson, M.B. 1996 Indian River Project Area Recreation Effects Analysis Report

DP-1

DP-2

DP-3

DP-4

DP-5

DP-6

FS Response

DP-1 Comment noted.

DP-2 Comment noted.

DP-3 Refer to the Other Issues section, Small Timber Sales portion in Chapter 1.

DP-4 Volume numbers in Appendix A have been updated to reflect a more current market demand situation.

DP-5 Refer to Response TK-5.

DP-6 Comment noted.

FS Response

DQ-1 Comment noted.

Forest Service,

1-18-98

Once again, I hear of another destructive project that will inevitably endanger more of the natural esthetic that makes up the remaining wilds of our earth, here in our home Alaska. As a federal agency, it's sickening to me to hear the Forest Service has lost jurisdiction on the go ahead with such a tremendously devastating project as the one at Indian River Area. Because, it seems that no one has an outside opinion on the choices you make to use our lands as a nation. Your without a budget so you say but when the facts fell in place you are less and less willing to go the extra mile to include an over all vision on how to use these lands effectively for all persons affected. The heart of the matter to me concerning this area in question is that people are fed up with seeing the Forest Service manage our lands so poorly. Without vision, Without a consideration for the environment the local economy or our future generations.

I know your choice lies in an office and has been or will be discrete unto your superiors. That's okay. You don't help me or my family with our situation in Lemon Cr. Ineuv concerning the same issues. The forest. Our last link to some healthy planet in the universe. I feel for the people affected in Tenakee. Please do them justice by hearing those opposed to the project in the Indian River Area as well as those for it. Thank you, Dylan Quigley Lemon Cr. Ineuv

DQ-1

FS Response

721 A Street
Sitka, AK 99835
January 11, 1998

Forest Supervisor
Tongass National Forest- Chatham District
Attn: Indian River EIS
204 Siglinaka Way
Sitka, AK 99835

We ask that the U.S. Forest Service adopt a "no action" policy in regard to future timber sales in the Indian River area on Chichagof as well as in the Finger Mt. area on Baranof and throughout the Tongass National Forest. These are sensitive wildlife habitats and are important to subsistence use, and further logging and road building in these areas will do irreparable harm.

The protection of the entire Tongass is important to the good health of our planet and continued destruction through logging at enormous taxpayer expense for the benefit of a relatively small number of people (and politicians) is inexcusable.

We hope that the USFS will finally accept its responsibility to protect and restore our wilderness instead of acting as a willing vehicle for its ruination.

Sincerely, 

Emory, Mary, Erika, Erik,
Bridget, Ian, Juliet,
Walter, Catherine, Colin,
Aidan & Mikhail Gonzales

EG-1 Consideration of timber sales beyond a reasonably foreseeable future in the Indian River and Finger Mountain areas, and throughout the Tongass National Forest is outside the scope of this project specific EIS.

This EIS includes a No Action alternative that considers no timber management activities at this time. Timber management activities may be considered at some time in the future under this alternative.

Refer to Chapter 4 in this EIS for impacts to these and other resources.

EG-2 The Tongass is a National Forest. Management concepts that apply to the National Forests include multiple-use, sustained yield, and conservation, as well as protection on an as needed basis. "Protection" of an entire area is a management concept that fits better with the mission of the National Park Service. Consideration of "protection" of the entire Tongass National Forest is outside the scope of this project specific EIS.

Refer to Response TK-3.

EG-3 Comment noted.

EG-1

EG-2

EG-3

FS Response

NAME: Eric M Wilson PHONE: message 907 736 2340

ADDRESS: Box 592 TKE 99841

IMPROVING THE INDIAN RIVER TIMBER SALE(S) PROJECT

Help us identify improvements for the Indian River Timber Sale(s) Project. An improvement may be an action (such as rearranging the mix of harvest units and harvest methods to improve economics), a mitigation measure (such as motorized vehicle road closures to reduce soil erosion), or a construction project (such as a recreation cabin or cross-country ski/hiking trail).

- | | | | | | | | | | |
|--------------|--|--------------|---|--------------|--|--------------|--|--------------|---|
| EMW-1 | <p>1. How could the Indian River Timber Sale(s) Project be improved? Describe the improvement(s); please be as specific as possible.</p> <p><i>the only improvement would be to cease and desist; declare the entire project unnecessary and leave the Indian River watershed to heal its wounds from previous logging -</i></p> | EMW-2 | <p>2. Why is this improvement desirable?</p> <p><i>although not apparent to the industrial and governmental mind-set of 'take while you can and get out' the diversity and interrelationships of the Chigofit Island environment would be spared further destruction.</i></p> | EMW-3 | <p>3. How feasible is this improvement? Please be as specific as possible.</p> <p><i>very feasible - simply recognize the God given right to live on this Earth without everything being 'managed' and removed to satisfy the greed and insanity of those who would benefit and profit from the slow death this style of industrial forestry encourages.</i></p> | EMW-4 | <p>4. What obstacles are standing in the way of making this improvement?</p> <p><i>- the United States Forest Service and the federal government - the prevailing attitude of raping our resources for the short term profit of a few workers and exporters.</i></p> | EMW-5 | <p>5. What other people, areas, issues, or viewpoints must be considered if your improvement is implemented?</p> <p><i>the primary consideration of implementing this improvement would be the benefit to all the non-human inhabitants of this watershed; a basic recognition that we cannot ignore everything but the human element in the diversity of a forest community.</i></p> |
|--------------|--|--------------|---|--------------|--|--------------|--|--------------|---|

EMW-1 The EIS includes a No Action alternative that addresses the concerns you raise in your comment.

EMW-2 Comment noted.

EMW-3 Comment noted.

EMW-4 Comment noted.

EMW-5 NEPA requires an Environmental Impact Statement be prepared if proposed actions will have a significant effect on the human environment. The process may appear to have a human bias about it due to this requirement.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

January 20, 1998

Reply To
Attn Of: ECO-088

Ref:95-102-AFS

Linn Shipley
USDA Forest Service
Tongass National Forest, Chatham Area
204 Signaka Way
Sitka, Alaska 99835

Dear Mr. Shipley:

The Environmental Protection Agency (EPA) has reviewed the draft Environmental Impact Statement (draft EIS) for the proposed Indian River Timber Sale(s) in accordance with our responsibilities under the National Environmental Policy Act and §309 of the Clean Air Act. The draft EIS analyzes a no action alternative and five action alternatives to harvest between approximately 24 and 37 million board feet of timber from a project area located on the northern shore of Tenakee Inlet, on Chichagof Island. The draft EIS identifies Alternative C as the preferred action alternative.

We are encouraged to see that many topics/issues we have raised in previous reviews of proposed timber sales on the Tongass have been addressed in the design of the proposed action alternatives. We believe that the establishment of riparian management areas (RMAs) prescribed in the Riparian Standards and Guidelines of the 1997 Tongass Land Management Plan (TLMP), and the use of non-clearcutting harvest techniques will provide for significant protection of resources within the project area. We also believe that the watershed analysis developed for the project is a critical element in the development of a meaningful management strategy for the project area. While we are relatively comfortable with certain elements of the action alternatives presently being considered, we would like to highlight the following topics that should be addressed in the final EIS.

Watershed analysis

We are pleased to see that a watershed analysis was developed as part of the planning effort for this project. Because we believe that the watershed analysis (WA) is the "backbone" of the draft EIS, we recommend that the WA be included as an appendix to the final EIS.

Cooperating Agency Status

The draft EIS incorrectly identifies the Environmental Protection Agency (EPA) as a cooperating agency on this project. While the EIS correctly indicates that National Pollutant Discharge Elimination System (NPDES) permits would need to be issued by EPA for log transfer facilities (LTFs) under Section 402 of the Clean Water Act, that does not confer official

FS Response

EPA-1 Comment noted. Refer to Response EPA-7.

EPA-2 Comment noted. Refer to Response EPA-8

cooperating agency status on EPA for this project. The responsibilities of lead and cooperating agencies are presented in the implementing regulations for the National Environmental Policy Act (40 CFR 1501.6). We were unable to accept formal cooperating agency status for this project due to resource constraints. Nonetheless, we look forward to working cooperatively with the Forest Service in the development of any necessary NPDES permits for the proposed LTFs in the event that the proposed project moves forward.

EPA-2 (cont.)

Unit Cards

Because the unit cards presented in Appendix J identify the specific mitigation measures to be applied during layout of the project, we believe that the direction in the cards should be clear and specific. To that end, our detailed comments (enclosed) suggest changes that should be made to the unit cards that accompany the final EIS.

EPA-3

Roads

We are concerned with the overall lack of specificity in the mitigation strategy that would be used to minimize the impacts of proposed new roads and to correct fish passage and washout problems on the current road system. Information presented in the main body of the EIS and on the road cards (Appendix I) indicates that there are currently a high number of washouts at alluvial fan crossings and culverts that are blocked on the existing road system. Unfortunately, due to the limited information presented on the road cards, we are unable to determine (with any degree of certainty) how many of these problems would be corrected with the implementation of mitigating alternatives. Our detailed comments offer suggestions related to road cards and the action alternatives. Additionally, we recommend that you work with the Army Corps of Engineers (Corps) to determine whether roads proposed to be used for recreational purposes after timber harvesting would require permits from the Corps pursuant to Section 404 of the Clean Water Act.

EPA-4

Log Transfer Facilities (LTFs)

Due to the extent of the current zone of deposit, we recommend that the Sunshine Cove site be designed and operated in a manner which allows for direct transfer of logs from land to barge. We recommend that all new LTFs are designed for direct transfer of logs from land to a barge in order to avoid and minimize the adverse impacts of bark discharge, accumulation, shading, and compaction associated with log transfer, rafting, and storage. We also recommend inclusion of the 1996 dive survey report as an appendix to the final EIS.

EPA-5

Wetlands mapping

We recommend that the final EIS include delineation of wetlands within the project area using the 1987 *Corps of Engineers Wetland Delineation Manual*.

EPA-6

Based on these concerns/issues, we have rated the draft EIS EC-2 (Environmental Concerns - Insufficient Information). This rating and a summary of our comments will be published in the *Federal Register*. A summary of the rating system used in our review is enclosed for your reference.

Enclosed please find our detailed comments, which elaborate further on the issues

FS Response

EPA-3 Comment noted. Refer to Response EPA-9.

EPA-4 Comment noted. Refer to Response EPA-10.

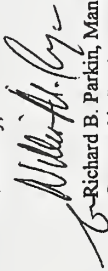
EPA-5 Comment noted. Refer to Response EPA-11.

EPA-6 Comment noted. Refer to Response EPA-12.

identified above. We are interested in working closely with the Forest Service in the resolution of these issues and I encourage you to contact Bill Ryan at (206) 553-8561 at your earliest convenience to discuss our comments and how they might best be addressed.

Thank you for the opportunity to review this draft EIS.

Sincerely,



Richard B. Parkin, Manager
Geographic Implementation Unit

Enclosures

cc: Kevin Hanley, ADEC
Ralph Thompson, ACOE-Juneau

Watershed analysis

We are pleased to see that a watershed analysis was developed as part of the planning effort for this project. We view watershed analysis (WA) as a tool that is fundamental to making meaningful management decisions within a watershed. Because we believe that the watershed analysis is the "backbone" of the draft EIS, we recommend that the WA be included as an appendix to the final EIS. While we understand that "incorporation by reference" is encouraged under NEPA, we feel that the WA serves as an important source of information that relates directly to the development of the proposed project. Consequently, we believe that appending the WA to the final EIS would provide easier access to information that is referred to numerous times in the draft EIS.

EPA-7

Cooperating Agency Status

The draft EIS incorrectly identifies the Environmental Protection Agency (EPA) as a cooperating agency on this project. While the EIS correctly indicates that National Pollutant Discharge Elimination System (NPDES) permits would need to be issued by EPA for log transfer facilities (LTFs) under Section 402 of the Clean Water Act, that does not confer official cooperating agency status on EPA for this project. The responsibilities of lead and cooperating agencies are presented in the implementing regulations for the National Environmental Policy Act (40 CFR 1501, section 1501.6). We were unable to accept formal cooperating agency status for this project due to resource constraints. Nonetheless, we look forward to working cooperatively with the Forest Service in the development of any necessary NPDES permits for the proposed LTFs in the event that the proposed project moves forward.

EPA-8

Unit Cards

Because the unit cards presented in Appendix J identify the specific mitigation measures to be applied during layout of the project, we believe that the direction in the cards should be clear and specific. To that end, we suggest the following changes be made to the unit cards that accompany the final EIS.

- 1) Many of the unit cards include the word "recommend" as the direction to be implemented in project layout. It appears that these recommendations were made by resource specialists in the development of the project. We believe that the final project should provide those laying out the project with a clear understanding of what must be implemented on the ground, based on the analyses presented in the draft EIS. The inclusion of the word "recommend" on the unit cards suggests to us that elements of project design disclosed as part of the NEPA process could be changed during layout. We recommend that the final unit cards provide clear and specific direction that allows for the accurate "on-the-ground" translation of the project described in the EIS.
- 2) We recommend that the unit cards identify the Riparian Management Areas (RMAs) that are to be established throughout the project area. We believe that clearly identifying them on the unit cards will serve to ensure that they are properly established during layout.

EPA-9

FS Response

EPA-7 As required at 40 CFR part 1500.4, much of the background and technical information was briefly summarized in the EIS to reduce paperwork for this EIS. The watershed analysis was not included in the appendices based on size alone. We provided a copy of the Indian River Watershed Analysis to your agency, the Tenakee Springs library, and anyone who requested it. It is available to anyone on request from the Assistant Forest Supervisor's Office in Sitka, Alaska.

EPA-8 The Forest Service requested that the EPA be a cooperating agency for this project in a letter from Forest Supervisor Gary Morrison dated April 24, 1995. The EPA did not respond to this request per 40 CFR part 1501.6. The EIS indicates only that the EPA was invited to be a cooperating agency, along with the Army Corps of Engineers. Your comment letter dated January 20, 1998 will serve as the formal declination to be a cooperating agency. The reference to the EPA as a cooperating agency on the cover page has been removed.

We also look forward to working cooperatively with EPA staff to obtain necessary permits.

EPA-9 The unit cards have been edited as you suggest.

RMAs were not shown on the unit card maps due to concerns that the maps would become cluttered and attempt to display too much information. The unit cards have been edited to include a specialist on site during lay-out to identify Riparian Management Areas (RMAs) as necessary.

Roads

We are concerned with the overall lack of specificity in the mitigation strategy that would be used to minimize the impacts of proposed new roads and to correct fish passage and washout problems on the current road system. Information presented in the main body of the EIS and on the road cards (Appendix D) indicates that there are currently a high number of washouts at alluvial fan crossings and culverts that are blocked on the existing road system. Unfortunately, due to the limited information presented on the road cards, we are unable to determine (with any degree of certainty) how many of these problems would be corrected with the implementation of the action alternatives. We offer the following suggestions related to road cards and mitigating impacts from roads:

- 1) We recommend that each road segment be clearly identified on the road cards. The text on the cards refer to specific segment numbers, yet the maps do not show these segments. Consequently, it is difficult for the reader to understand where specific mitigation actions are proposed to take place.
- 2) We recommend that each road card clearly depict the location of each of the existing problem areas (washouts, blocked culverts, etc.) and clearly identify the actions proposed to be taken at each of these locations. The corrective actions should be designed to ensure that the problems being corrected will not recur in the long term.
- 3) We recommend that crossings at alluvial fans be avoided. In the event that such crossings cannot be avoided, we recommend that armored ditches be used for all alluvial fan crossings.

Information presented in Appendix D indicates that the Forest Service intends to provide for recreational use of some of the roads that would be constructed with project implementation. We recommend that you work with the Army Corps of Engineers (Corps) to determine whether such roads require permits from the Corps pursuant to Section 404 of the Clean Water Act. Should permits be required, we recommend that the permits be developed concurrent with the development of the final EIS, as prescribed at 40 CFR 1500.2(c).

Log Transfer Facilities (LTFs)

We disagree with the statement on page 3-61 that the Sunny Cove LTF meets the Alaska Timber Task Force (ATTF) LTF guidelines. The guidelines establish a threshold bark accumulation level as 100 percent coverage exceeding both one (1) acre in size and a thickness greater than 10 centimeters (3.9 inches) at any point. With a documented zone of deposit at the Sunshine Cove site of 1.25 acres and 0.04 acres exceeding 10 centimeters in depth, we believe that further degradation of the marine environment should be avoided. We recommend that the Sunshine Cove site be designed and operated in a manner which allows for direct transfer of logs from land to barge.

The direct transfer of logs from land to a barge would avoid and minimize the adverse impacts of bark discharge, accumulation, shading, and compaction associated with log transfer, rafting, and storage. We strongly encourage the Forest Service to design and operate any new LTF in a manner that would facilitate direct transfer of logs from land to barge.

We also recommend inclusion of the 1996 dive survey report as an appendix to the final EIS.

FS Response

EPA-10 Refer to Response COE-6. Also, the Forest Service proposed and successfully obtained "10 percent road funds" to repair the road problems in the Project Area in fiscal year 1998.

The unit and road cards summarize information that the lay-out and design crews use in their work. The cards are part of a larger folder that contains more site specific mitigation measures and designs.

The road maintenance contract for the Project Area will include site specific designs to repair the current situation and ensure that the problem situation does not happen again in the long term. For the latter to occur, road maintenance funding will be necessary.

Alluvial fans were avoided wherever possible. In situations where alluvial fans could not be avoided and were crossed, armored ditches will be used where appropriate. In some cases, alluvial fans were crossed with bridges.

EPA-11 This part of the EIS has been clarified to say that, while the current zone of bark deposit is approximately 1.25 acres, the deposits do not cover 100 percent of the zone. Approximately 0.04 acres of the zone has a bark depth (thickness) greater than 10 centimeters. The former Sunshine Cove LTF site is well within the Alaska Timber Task Force LTF Siting, Construction and Operation, and Monitoring and Reporting Guidelines.

The Record of Decision for this EIS will include the final decision for either a drive down ramp or bulkhead LTF.

The dive survey report has been included in Appendix K.

Wetlands mapping

We recommend that the final EIS include delineation of wetlands within the project area using the 1987 *Corps of Engineers Wetland Delineation Manual*. The road system should be presented on a map with the delineated wetlands to allow reviewer to determine whether impacts to wetlands have been avoided and minimized.

EPA-12

FS Response

EPA-12 We continue to work with the Army Corps of Engineers (ACOE) regarding delineation of wetlands in the Project Area and impacts associated with timber management activities. For example, we met with and reviewed and discussed the ACOE's comments and concerns, including wetland delineation mapping. We provided the ACOE with a map that displays areas deleted and deferred from the original unit pool in order to protect resources, including wetlands.

Environmental Impact of the Action

10 - - Lack of Objections

The Environmental Protection Agency (EPA) review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

9C - - Environmental Concerns

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce these impacts.

90 - - Environmental Objections

The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

9U - - Environmentally Unsatisfactory

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

Adequacy of the Impact Statement

Category 1 - - Adequate

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2 - - Insufficient Information

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses or discussion should be included in the final EIS.

Category 3 - - Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that should be analyzed in order to reduce potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussion of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the National Environmental Policy Act and or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

* From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment. February, 1987.

FS Response

Indian River Timber Sale(s)
Draft Environmental Impact Statement
January 6, 1998
Testimony of Elizabeth L. Shaw
Tenakee Springs, Alaska

ES-1 Comment noted.

ES-2 Comment noted.

For the record, I am Elizabeth Shaw, a resident of Tenakee Springs. I am sorry that I could not be at the hearing in person. If there is sufficient time at the hearing on January 6, 1998, I have asked Molly Kemp Olmsted to read my statement. If there is not sufficient time, this statement will be submitted in writing with the balance of my written testimony.

I was chairperson for the City of Tenakee Springs Sunny Cove tidelands Committee. I worked with other Tenakee Springs residents and staff of the Forest Service to draft the memorandum of understanding that was ultimately ratified by Tenakee voters in a special election in January, 1997. I was generally pleased with the development of the memorandum of understanding. I felt that the parties tried to write an agreement that would resolve at least some of the problems identified by either side. However, I was truly shocked and then angry when I read the draft EIS. The draft EIS's references to the MOU are negligently or intentionally misleading.

It was no secret, during the negotiations surrounding the drafting of the MOU, that the City of Tenakee Springs was only willing to allow the use of its Sunny Cove tidelands as a log transfer facility in order to save Ten Mile Creek from being used as a log transfer facility. During the negotiations and in the written representations by the Forest Service staff, I as well as the voters of Tenakee, were led to believe that in agreeing to the use of city-owned Sunny Cove tidelands for a log transfer facility, no other LTF would be constructed for the Indian River timber sales project. The memorandum of understanding reads in pertinent part, "For the duration of this MOU, the Forest Service agrees that it will not, directly or indirectly, develop or use or permit the development or use, of alternative log transfer facility sites in connection with the Indian River Project, including but not limited to sites at Ten Mile Creek, or other locations in Sunny Cove." (MOU Sec. II C).

In a question and answer document prepared by the Forest Service and mailed to Tenakee voters with a letter signed by the Sitka District Ranger, the

ES-1

ES-2

FS Response

ES-3 The bark deposition paragraph in Chapter 3 has been clarified to make it clearer that the former Sunshine Cove LTF meets the guidelines in Appendix K.

The dive report was not discussed because it was never raised as a topic for discussion. The Forest Service expects to get all necessary permits, including the permits for LTFs, as required. Refer to the Permits and Licenses section in Chapter 1 for additional information. Also, a copy of the former Sunshine Cove LTF site dive report has been added to Appendix K.

ES-4 The National Environmental Policy Act (NEPA) regulations require us to develop and evaluate a range of all reasonable alternatives that fulfill the purpose and need and address the significant issues. The Proposed Action (Alternative B), that included the Sunshine Cove and 10-Mile Creek LTF sites, was described in the Notice of Intent dated November 1, 1995 before the MOU was approved by Tenakee Springs' voters in January 1997. The other alternatives (C through F) were developed and approved by the responsible official in October 1996, also before the MOU was approved. Three LTF sites were displayed, discussed, and analyzed in the EIS to provide the responsible official with a range of reasonable alternatives that fulfill the purpose and need, and address the significant issues (See Chapter 1, Issue Area 4: Log Transfer Facilities (LTFs) and Camp Location). The MOU, in and of itself, does not take the place of NEPA analysis and decision documents, although it may play a role in the decision made.

The MOU spells out what agreements the Forest Service and the City of Tenakee Springs were making.

Forest Service wrote: "Q. Will any other LTFs be developed in the Project Area if Proposition One passes? A. No. If Proposition One passes, we have agreed while the MOU is in effect, we will not develop any other LTFs for the Indian River Timber Sale(s) Project." Jim Franzel, Sitka District Ranger, in a letter mailed to the Tenakee voters dated January 13, 1997, stated: "The Forest Service would like to use the site [Sunny Cove] for the upcoming Indian River Timber Sales because, it is the most environmentally sound and economical option."

As an aside regarding the environmental soundness of Sunny Cove I would note that the Forest Service states in the draft EIS that a marine survey completed on Sunny Cove in 1996 revealed that the Cove contains more than 1 1/4 acres of accumulated bark depositions from prior logging operations and that 0.04 acres have a depth of 10 centimeters or more. Although the draft EIS states that these levels meet acceptable guidelines, a closer look at the guidelines results in a different conclusion. (See draft EIS Appendix K) The Forest Service did not discuss these findings regarding bark depositions with the City of Tenakee prior to the vote in 1997, nor at any later time. Nor has there been any discussion in the draft EIS nor directly with the City about how this bark accumulation may affect whether the Forest Service can get a permit to have a log dump at Sunny Cove.

The Forest Service pressed the City of Tenakee voters to ratify the MOU so that the way would be clear for use of the Sunny Cove site. The Forest Service even agreed to pay the costs for a special election so that the matter could be decided prior to the development of the draft EIS. The clear statement to the City was that Sunny Cove would be the sole proposed transfer facility site. The Forest Service could propose Sunny Cove as the log transfer site rather than 10 Mile Creek or Sunny II because not only was Sunny Cove the most economical and the most environmentally sound but the City of Tenakee had agreed to the use of its tidelands. It is totally unbelievable to me that the Forest Service staff thought that the City of Tenakee was entering into this agreement just in case Sunny Cove was selected as the site.

But perhaps conditions changed after January, 1997. Perhaps the Forest Service realized that Ten Mile or Sunny II would be the preferred site.. Between that decision and the time that the draft EIS was mailed out, it would have been appropriate for the Forest Service staff to contact the City of

ES-2
(cont.)

ES-3

ES-4

ES-5

FS Response

Tenakee and inform the city that the Forest Service had decided that the Sunny Cove site was no longer "the most environmentally sound and economical option" and as a consequence the Forest Service might well terminate its agreement with Tenakee Springs giving its sixty day notice of termination in due course. That call was the least that could have been expected from the public officials who aggressively pushed for the use of Sunny Cove. It certainly should have been the course of action for public officials operating in good faith.

ES-5
(cont.)

Another way to look at this situation is that the multiple site proposals are merely a sham. The Forest Service still believes that Sunny Cove is the best choice. However, in an effort to appear that they will consider all options, they propose other sites. If that is the case, one wonders how many other options in the draft EIS might also be mere subterfuge. Options that look good but options that the Forest Service has known all along it will not seriously consider.

ES-6

Or perhaps the whole draft EIS presentation is so confused that the drafters truly don't know which site is being considered for what reasons. It is interesting to note that the draft EIS states for Coastal Zone Management consistency review only the preferred alternative LTF need to be considered. However the announcement from the Coastal Zone Management authorities states that the Forest Service is proposing the use of both Ten Mile Creek and Sunny Cove for the proposed Indian River Timber sale(s). Alternative C is the preferred alternative and Sunny Cove is the only LTF mentioned in that alternative. Does that mean that Alternative C is not really the preferred alternative but that Alternative B is? Or is the log transfer facility site so unimportant to the decision making process that any one of them will do? Or will one sale use Sunny Cove and another sale use 10 Mile Creek?

ES-7

Or maybe the people who developed the draft EIS didn't talk to the people who negotiated the agreement. Perhaps the EIS authors never read the memorandum of understanding so they just didn't see the provision regarding Sunny Cove being the sole site for an LTF under the MOU. That possibility is hard to believe because Sunny Cove and the MOU are repeatedly mentioned in the draft EIS. For example, Appendix A, page 14: "There is currently a MOU between the City of Tenakee Springs and the Forest Service for use of this site [Sunny Cove] for timber sale operations" Chapter 1,

ES-8

ES-5 We are unaware of any conditions that changed after January 1997 affecting the LTF MOU. The Draft EIS identified Alternative C, which includes only the Sunshine Cove LTF site, as the Forest Service Preferred Alternative. The Forest Service has not decided that the Sunshine Cove site is no longer "the most environmentally sound and economical option." The Forest Service is not considering giving a sixty day notice of MOU termination. Since none of the scenarios described in the comment were occurring, there was no reason to contact the City.

ES-6 NEPA implementing regulations require agencies to consider all reasonable alternatives. A reasonable alternative is one that, among other things, addresses significant issues and meets the purpose and need for the project. NEPA provides the agency with the authority to set reasonable objectives for the project. The reasonable objectives for this project focused on timber management activities. The alternatives were developed from the issues raised during the public scoping period after the Notice of Intent to prepare an EIS was published in the Federal Register (November 1995).

ES-7 On November 1, 1995, a notice was submitted to the Federal Register identifying a proposed Federal action to take place in the Indian River area. The notice invited public comment on this action and initiated the preparation of an environmental impact statement (EIS) based on the requirements of the National Environmental Policy Act. This proposed action was identified as Alternative B, with Alternative A identified as the no action alternative in the Draft EIS.

Based on comments received, a number of alternatives to the proposed action (Alternative B) were developed and analyzed (Alternatives C-F) in the Draft EIS without a decision regarding their relative merits. The responsible official reviewed the analysis and identified a Forest Service Preferred Alternative (Alternative C) to be displayed for comment in the Draft EIS.

FS Response

page 6: "One previously existing log facility (LTF) at Sunny Cove and one new site near 10-Mile Creek would be used to implement timber harvest." [Clearly not permitted under the MOU.] Chapter 1, page 19: "The Forest Service worked closely with the City of Tenakee Springs in order to develop a use agreement for City owned tidelands for a log transfer facility in Sunny Cove. The city ordinance approving the use agreement was voted on and approved by a majority of registered voters (27 yes - 5 no) in January, 1997." [This statement is misleading. The agreement was not approved by a majority of registered voters but rather by a majority of those registered voters who actually voted. There are over 250 registered voters in the Tenakee Springs election district.] Chapter 2, page 19: " Alternative D would have the least impact on recreational use of the Sunny Cove shoreline because the LTF would only be used for mobilization (unloading heavy equipment from barges)." [There was no discussion with the City of Tenakee regarding the use of the City's tidelands as a staging area for an different site. It defies logic to think that the MOU would allow the tidelands to serve as a staging area for environmentally degrading another area.] Chapter 3, page 6: "The Forest Service has an agreement with the City of Tenakee for reconstruction and use of this site, either as a drive down ramp or a bulkhead." Chapter 4, page 64: "Memorandum of Understanding (MOU) was signed by Regional Forester Phil Janek and Tenakee Springs mayor Louis Heins in November, 1996. The MOU addresses concerns of Tenakee Springs residents regarding use and occupation of City-owned tidelands in Sunny Cove. Sunny Cove is located approximately 3 miles southeast of the City of Tenakee [Actually Sunny Cove is located within the city limits.] Previous harvest of the Indian River, 10-Mile Creek, and Freshwater Creek drainages was accomplished utilizing an LTF site in the cove. This site was last used in 1986.

"The MOU specially addresses the use of the tidelands area at, and adjacent to, the former LTF site, and documents compensation to be paid to the City of Tenakee Springs for use or occupation of their tidelands....See Appendix C for mitigation measures requested by the City of Tenakee Springs and addressed in the MOU." Appendix C, page 5: "The following mitigation measures requested by the City of Tenakee Springs are also addressed in the MOU:

"No logging camps are allowed within the city limits of Tenakee Springs.

(ES-7, cont.) Based on comments received on the Draft EIS, the responsible official will make a final decision concerning an alternative to be identified in the Record of Decision and implemented in the Project Area. This alternative will likely be the Draft EIS Preferred Alternative unless comments on the Draft EIS identify flaws in the analysis or convince the responsible official to select a different alternative.

ES-8 As stated in the comment, the MOU was repeatedly mentioned in the EIS.

The list of Tenakee Springs' registered voters that we obtained from the State Elections Office included approximately 100 names.

The Alternative D narrative in Chapter 2 has been clarified to say that equipment would be unloaded at high tide onto the right-of-way easement the Forest Service has with the State of Alaska. This area is outside the City of Tenakee Springs tidelands.

The MOU and related documents have been added to the appendices in the Final EIS.

ES-8
(cont.)

FS Response

ES-9 Refer to Response ES-8.

ES-10 We are unaware of any situations during the MOU negotiations where needed information was withheld.

The Forest Service prepared a Voter Information Packet prior to the January 1997 election that provided information about the Sunshine Cove LTF site, the MOU, and the Indian River EIS process. The packet included a contact person if there were questions or if additional information was needed. There were no questions or requests for additional information from anyone. As stated in Chapter 1 of the EIS, "This EIS, in accordance with CEQ regulations, is not a decision document in itself, but is written to provide sufficient information for the decision-maker."

This EIS is not the only source of information for this project. The Planning Record also includes a great deal of information that may or may not be displayed in the EIS. As stated in the comment, information was provided from the MOU.

"The East Tenakee Trail, within the road right-of-way, will be properly maintained and protected by the Forest Service against impacts that may render it impassable or difficult to use as a result of logging activities.

"Vehicles traveling within 0.25 miles of the LTF and East Tenakee Trail will be limited to a maximum speed of 10 miles per hour.

"Vehicles and other machinery operating near the LTF will be muffled so as to comply with applicable federal and state standards.

"Use of helicopters at the tidelands area will be limited to emergencies or other non-recurring situations, and they may not be used for timber delivery or routinely fueled on the site.

"Notice of blasting activities shall be posted in Tenakee Springs and guards will be utilized on the trail when blasting activities are conducted. Blasting shall occur between the hours of 8:00 a.m. and 5:00 p.m."

Quite a list. A list that had to culled from diverse provisions in the MOU. A list that could not have been developed without reading the entire MOU. But no mention is made in the draft EIS that Sunny Cove tidelands may be used under the MOU only if it is the sole log transfer facility.

It is clear to me that the draft EIS contains only information about the MOU that benefits the Forest Service position. It is inconceivable to me that the fact that the Forest Service agreed that Sunny Cove would be the only site, would be deleted from repeated references to the log transfer facilities in general and Sunny Cove in particular.

I have been involved as a public official in various negotiations throughout my work life. Many of them have been between adverse parties. Interests were in conflict and the goals desired by the parties were different. Despite these differences, as a public official I was expected to deal fairly with other government officials or private parties regarding the matters before us. To withhold needed information would have been an abuse of my public trust. The persons who represented the Forest Service in the MOU negotiations

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ES-10

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have abrogated their public trust. Either intentionally or through gross negligence they misled the City of Tenakee and its voters. In the development of the draft EIS they deceive the public by providing only partial information regarding the use of Sunny Cove. This information is not just an interesting collateral fact, but is essential to the public's decision making process. In my estimation the Forest Service's deception has tainted the entire EIS process. If the Forest Service misleads in one important area regarding this sale, they can intentionally or negligently mislead the public in other areas. The public, including Tenakee Springs, can only wonder what other information is missing from this document. The Forest Service had no difficulty in providing information from the MOU regarding how they would abate noise, protect against pollution, or control vehicular traffic. All statements that make the Forest Service appear as if it is taking environmental and safety issues into account to the benefit of Tenakee Springs. The reality is quite different.

I am sorely disappointed with my contact with the Forest Service regarding this matter. As a relative newcomer to Tenakee I didn't come to the negotiations with a preconceived notion about timber sales or the EIS process. After having been a public employee for nearly two decades I naturally identified with the difficulties that public employees face in balancing the varied and often conflicting interests of the public. However, my experience with working with the Forest Service leads me to believe that the culture in this agency allows the employees to tailor the facts to meet their own ends...a deceptive practice that when discovered leaves the public with little recourse other than to resist rather than cooperate with future Forest Service initiatives.

ES-11

FS Response

ES-11 Comment noted.

Indian River Timber Sale(s)
Draft Environmental Impact Statement (draft EIS)
Testimony of Elizabeth L. Shaw
P.O. Box 532
Tenakee Springs, Alaska 99841
December 22, 1997

Organization of the draft EIS

My initial comments regarding the draft EIS for the proposed Indian River Timber Sale(s) Project concern the organization of the document itself. You can get an understanding of a lay reader's frustration with the organization of the draft EIS if you select a subject and try to follow that subject throughout the document. It is almost impossible to do so. Information on a single topic

ES-12

evident that conclusions contained in the draft EIS do not necessarily follow from the data presented. Although a problem created by the proposed logging operations may be identified and discussed repeatedly, the conclusion often is that the problem isn't an impediment to the proposed logging. There is little consideration that when the draft EIS discounts one problem after another it is in effect ignoring the cumulative effects that the Forest Service is suppose to consider in its decision-making process.

The draft EIS misuses words to color the information presented. We are familiar with this technique used by the advertising industry. As an example, the document usually avoids the term "clear-cut." That phrase has a negative connotation. Therefore, the draft EIS writer substitutes the phrase "even-aged" to replace the negative term clear-cut. The writer then goes on to say that an even-aged method of timber harvesting will result in a "higher level of development". "Develop" is defined in the Webster's Seventh Collegiate Dictionary as "...a process of natural growth, differentiation, or evolution by successive changes or to expand by a process of growth." A child, a puppy, a tree or an idea may develop. But clear-cuts do not develop and clear-cuts do not result in a higher level of development. The use of the "green" words to describe traditional activities of clear-cutting is an obvious attempt to make

ES-13

FS Response

ES-12 We are unsure if all of your comment was printed here; it appears that a line may have dropped out.

Cumulative effects are discussed in each of the resource sections in Chapter 4.

ES-13 Referring to the example in your comment, the Index for the EIS indicates that the term "clearcutting" was used on at least 33 pages. On the other hand, the term "even-aged" was used on only 4 pages.

what is a negative value and a negative result appear to be a positive value and a positive result.

The draft EIS document is also filled with weasel words. Action alternatives "are not expected" to result in an adverse environmental consequence. An adverse consequence "probably" won't happen. If a source stated that logging will cause a specific economic hardship, the EIS writer interprets that statement to mean that the reporting source has a concern that the source feels may cause a change in his or her lifestyle. A definite statement regarding the economic result of logging is changed into a wishywashy statement about feelings and lifestyles.

The draft EIS for the proposed Indian River Sale(s) is a clear example of distorting information through tailoring facts and filtering information through thinly disguised value judgments.

Need and Purpose

The Forest Service states that the Indian River Sale(s) Project is proposed at this time to respond to the following goals and objectives:

- 1) improve timber growth and productivity on suitable timber lands made available for timber harvest, and manage these lands for a long-term sustained yield timber;
- 2) contribute to a timber supply from the Tongass that seeks to meet annual and TLMP planning cycle market demand; and
- 3) provide opportunities for local employment in the wood products industry, which in turn contributes to the local and regional economies of Southeast Alaska.

That the proposed sale(s) in the Indian River area will meet these goals and objectives is speculative at best. Perhaps there is sufficient data to prove that cutting down an existing old growth habitat will be beneficial 50 to 100 years in the future, even though the draft EIS admits that the second growth will not be high quality timber. Perhaps the new trees will be of a variety that we

FS Response

ES-14 Comment noted.

ES-15 The EIS actually says, "...the Project would have a positive effect on local community economies if a small, local wood products industry were developed, or if the harvest operations were to generate logging and other jobs for local residents." The EIS goes on to say, "It is possible that some residents may be hired and some goods and services purchased locally by contractors for timber harvest and road construction activities."

ES-15
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currently consider more marketable than the current mix of hemlock and spruce. However, local craftsmen working with our limited supply of cedar and our abundant supplies of hemlock and spruce have shown that there is a stable and appropriate wood supply for small-scale, high-value woodworking operations. It is in the best interest of local employment to allow these workers to continue to expand their work as a means of improving the local economy. Although the Forest Service's identified goal is to provide local employment, the draft EIS states that there will be no new local employment as a result of this proposed timber sale(s). Rather than creating local employment in the woods product industry, this sale will harm current local jobs in the wood product industry and will create only temporary jobs for non-permanent non-local loggers.

The draft EIS does not prove that there is a market demand for the timber that would be logged in the Indian River area. There is no authority cited as to why the Forest Service must supply the timber industry as a whole with a three year supply of purchased but unharvested timber other than the fact that it may take about 3 years for the sales to be completed and the timber logged. The draft EIS states that this new timber supply is a means of providing for stability in relation to fluctuating market demand. It appears more likely that the logging of these additional trees will only provide for continued negative cost benefit analyses. The cost-benefit analysis contained in the draft EIS in Chapter 4, page 36 provides that, "The negative mid-market values for these alternatives indicate that they also would be uneconomical based on average market values. Under strong market conditions, some or all of the alternative may be economic." [emphasis added] The draft EIS goes on to state that sales with negative values do sell at times so that appraisal results alone are not the definite, final determination of a sale's economic viability. However, since the writing of this EIS and in fact during its preparation, the market for timber has eroded even further. It is not only the closing of the pulp mills and increased competition from other countries in the international market, but that fact that Japan as a buyer is experiencing escalating economic adversities. The market for the timber is more than just weak. A timber sale at this time would mean that for profitability the Forest Service, in essence the federal taxpayer, would be required to transfer federal money to logging companies for their payrolls and investors' benefits.

But of course the Forest Service also states in the Appendix A, page 15 that "Time periods of relatively low timber demand provide an opportunity to

ES-16

ES-16
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increase available timber supply in anticipation of cyclical higher demand periods." One can't win for losing in this type of market demand analysis. If the market demand is low, cut the trees. If the market demand is medium, cut the trees. If the market demand is high, cut the trees. There does not appear to be any economic condition that precludes logging as long as the Forest Service is willing to subsidize the timber industry so that the logging contractor can show a profit. The Forest Service admits that the Indian River timber sale will not create opportunities for local employment. It also admits that current market demand is so weak that the sale would unnecessarily result in adverse economic consequences to the federal coffers. There is no benefit locally or nationally. The benefits appear to run only to the timber industry.

Additional proof of the poor economic value of a timber sale at this time can be found outside the draft EIS. In a recent article in the *Juneau Empire*, regional Forest Service staff are quoted as saying that market demand is low and therefore timber receipts will be low. The statement was made in the context of Ketchikan's desire to annex additional land to increase its revenue base. Recent solicitations for bids in other proposed sales, obtained no bids. What could be a clearer indication that there is no need for this new timber sale?

There is no positive economic basis for this sale as there is no market for the timber. It would be better to make some type of transfer payments outright to the timber industry rather than through the process of logging timber. Pay loggers to landscape parks or to build hiking trails or to plant trees in clear-cuts or to thin the impenetrable tangle of vegetation that the Forest Service euphemistically calls fast growing second growth.

Socioeconomic Considerations

Tourism, recreational opportunities, subsistence, wildlife habitat, historical and heritage resources and scenic quality are all tied to the socioeconomic well-being of Tenakee Springs. The draft EIS compartmentalizes these considerations so that there is little appreciation of the interrelationship among all of these factors. When several resources are adversely affected the

ES-17

FS Response

ES-16a The EIS is not required to prove that there is a market demand for timber from the Indian River Project Area. The EIS displays the results of the market demand analysis by Kathleen Morse (1998) completed for the TLRMP Record of Decision (1999 ROD). And on the other hand, new sawmills have recently started operations in Ketchikan and Wrangell, creating increased demand for timber. A veneer industry may begin operations in Ketchikan in the near future.

ES-16b Refer to Response TK-3.

ES-16c A "clearer indication" would be if Indian River timber volume is made available for bidders, and there are no bids received.

ES-16d The Forest Service has, and will continue, to fund projects, such as trail building and thinning, as authorized by law.

ES-17 The Summary Comparison: Effect on Resources, by Alternative table at the end of Chapter 2 has been improved to more clearly display information.

ES-17
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total effect may be the same as when there is a catastrophic impact on one resource.

The EIS at Chapter 1, page 21 states, "The focus of this issue [social values] is the impact of timber management activities on the social values of local communities, especially Tenakee Springs. Residents of Tenakee Springs are especially concerned about potential disruption to their way of life that could result from such activities. ...Some of the social value concerns that residents feel could disrupt their way of life include: interference with use of the East Tenakee Trail; noise and pollution from timber management activities and logging camps; changes in visual resource quality, recreational opportunities, and subsistence opportunities, reduced eco-tourist and outfitter/guide income; water quality and fisheries resource impacts on commercial fishing income; and potential impacts on heritage, karst and cave resources."

ES-18

In Chapter 2, page 2 the EIS states that there will be no harvest in old-growth land use designations (LUDs) and that not harvesting in these designations, "... would also accommodate the concerns of the Tenakee Springs residents regarding timber harvest effect on recreation and scenic quality in Tenakee Inlet." This statement is incorrect. Apparently since there is to be no logging directly behind the city area or in the otherwise required 1000 ft. shoreline buffer, the Forest Service equates not logging that area with accommodating the concerns of Tenakee Springs residents regarding the effects of logging on the recreation and scenic qualities of Tenakee Inlet.

ES-19

Tenakee Inlet, and even Tenakee Spring's smaller home range, are far larger than the small area covered by the currently protected old growth areas. There are multiple logging sales planned for the Inlet in the near future. Some of the clear-cuts will be within the direct view of Tenakee Springs across the Inlet (Finger Mountain sale(s)) or near the head of the Inlet (Eight Fathom sale(s)). Merely allowing a small area near Tenakee Springs to remain unlogged at this time does not accommodate the concerns of Tenakee Springs residents regarding the adverse socioeconomic effects of logging including decreased opportunities for recreation and the deterioration of the scenic quality of Tenakee Inlet. The residents of Tenakee Springs are concerned not merely about the Indian River sale(s) but about the cumulative effects of the past, planned and future logging of the land surrounding Tenakee Inlet.

ES-20

FS Response

ES-18 Comment noted.

ES-19 The statement referred to in the comment has been re-written to say that not all recreation and scenic quality concerns have been alleviated by not harvesting timber in the Old-growth LUDs.

ES-20 Cumulative effects are included in Chapter 4 by resource. Site specific scenic quality impacts are included in the Finger Mountain (in progress) and Eight Fathom EISs.

FS Response

ES-21

In discussing noise pollution the draft EIS paints a picture of a person hiking through the woods expecting pristine quietude. Instead the person hears helicopters overhead, trucks toiling up steep roads, generators producing electricity for logging machinery. The draft EIS surmises at Chapter 2, page 17 that this kind of noise might disturb the hiker. The phrase "might disturb" is an understatement to say the least. It is more truthful to admit that the person who expects to hear the usual sounds of the woods with moderate noise created by a nearby small town, would be angry or disgusted if he or she were assaulted with the cacophony of a full scale industry in the forest.

ES-21 The statement referred to in the comment has been clarified to reflect expectations people would have walking into an active harvest area.

ES-22

The draft EIS also states in Chapter 4, page 52 that "...in all action alternatives, the direct effect of noise on Tenakee Springs would probably be minimal. [emphasis added] A ridge system lies between the town and the main part of the Project Area where timber harvest activities would occur." The draft EIS neglects to mention that the City of Tenakee Springs lies along the Tenakee Inlet shoreline for many miles. Tenakee Springs is not just the downtown core. There are many homes along the shoreline that are not protected by a ridge. It is much more likely that there will be a background noise level of the industrial work heard in the downtown core and that those residents whose homes are along the shoreline east of town will be frequently and seriously disturbed by helicopter overflights as well as the noise created at the proposed log dump at Sunny Cove..

ES-22 The EIS recognizes that timber management activity noise will impact people in and near the activity. Mitigation measures (See Appendix C) have been developed to reduce impacts where possible and feasible.

ES-23

Comment noted.

In Chapter 4, page 54 the draft EIS authors note that the noise disturbance from the logging operation is expected to last three to five years and that "...people [recreationists] may not return to the area for this whole period. They may also influence new people by not recommending Tenakee Springs as a place to visit because of the noise and visual disturbance." The draft EIS admits that logging noise and the visual scars that are clear-cuts are situations that people want to avoid. And if the people who want to avoid these situations don't live in Tenakee Springs, they can just stop visiting Tenakee Springs. That result will have an adverse effect on tourism. But what about the residents of Tenakee Springs who cannot move away for 9 months of every year for the next three to five years. The value of their homes will be diminished by the noise and visual pollution. This economic effect will not only be direct, but will be cumulative when one takes into account the other logging planned for the head of the Inlet and across the Inlet. In order temporarily to bolster a failing timber industry in a time of very weak market conditions, the Forest Service will cause very real and serious economic loss

ES-23

ES-23
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to a community that is currently neither failing nor experiencing weak market conditions for its products of recreation, tourism, small scale high value woodworking and subsistence harvesting.

The draft EIS at Chapter 3, page 49 admits that "The community of Tenakee Springs has been developing its tourist trade for years. Members focus on the remoteness of the community to provide a peaceful, wildlands experience. Their advertising emphasizes such recreation activities as soaking in the hot springs, walking, charter fishing, wildlife viewing, kayaking, mountain biking, and hunting." The work of years to develop a new industry in Tenakee Springs could be destroyed in a relatively short period of time and it would be decades before a similar environment would exist for a revived tourism trade.

Those people who work in the timber industry at this time may need to be assisted to find new employment. But those loggers who need to find jobs in a field that has a future may agree with the statement in Chapter 3, page 63 of the EIS, "Residents are often quick to point out that the quality of life found in Southeast Alaska outweighs the possible disadvantages of seasonal employment, lack of jobs, cost of importing goods and services, transportation and weather." Loggers and mill workers in Southeast Alaska have received a great deal of federally financed and industry financed economic assistance for a transition to new work. Nonetheless there is a continuing push on the part of the timber industry through the Forest Service to fund new "jobs". To tie these new jobs to trees in the Tenakee area is neither fair nor can these new temporary jobs be economically justified.

ES-24

In Chapter 2, pages 22-23, the EIS authors relate that some money may be available for recreation and fisheries. In these days of limited budget, it is far-fetched to suppose that timber receipts might be used for recreation projects. It is my understanding that money for precommercial thinning and other activities that might assist in the production of a new, though inferior, crop is hard to obtain in the appropriation process. When the authors suggest that recreation projects are feasible, the reader's belief in the truth of the matter is stretched to the breaking point. The mention of these projects is mere window dressing...an attempt to make the unpalatable somehow palatable.

ES-25

Communities with admittedly limited direct impact (unless the impact is positive) from the proposed Indian River Timber sale(s), will receive money

FS Response

ES-24 Refer to the Land Use Designations (LUD) section in Chapter 1. Over 72 percent of the Project Area has been allocated to the Timber Production LUD.

ES-25 The EIS also mentioned that there are other funding sources that could be used to implement enhancement projects. These sources include regular capital improvement appropriations, partnerships, and others.

According to the Annual Monitoring and Evaluation Report for Fiscal Year 1996, the Chatham Area accomplished 1,004 acres of precommercial thinning in 1996. The Chatham Area accomplishes 1,000 - 1,500 acres of precommercial thinning each year.

The Forest Service is actively engaged in implementing recreation projects. For example, a shelter was built in Seal Bay (Tenakee Inlet) in 1998.

ES-26
(cont.)

from timber receipts and payments while the City of Tenakee Springs will receive a pittance although it is the city that will be the most adversely affected. (Angoon \$123,721; Hoonah \$214,425; Tenakee Springs \$17,565, Chapter 3 page 67). Of course with the loss of jobs in Tenakee Springs, the city will have fewer families and therefore fewer children to attend our school. As a consequence even the amount estimated in the draft EIS will exceed any payment for which Tenakee Springs may be eligible. Nonetheless it has been clear for years that the residents of Tenakee Springs are not interested in money as a substitute for wildlife habitat and resources that will sustain the people who live in Tenakee Springs long after the cash is gone.

After documenting numerous adverse effects that the logging of the Indian River area will have on the City of Tenakee Springs and its residents, the draft EIS states at Chapter 4, page 76, "Implementation of any of the [action] alternatives is not expected to have any major direct, indirect, or cumulative impacts on the socioeconomic of Tenakee Springs and its residents. This is due largely to Tenakee Springs' dependence on commercial fishing and subsistence, rather than timber, as the primary factors influencing the community...." This statement is not based on what has been presented in the EIS regarding the very definite direct, indirect, and cumulative adverse effects on recreation and tourism markets. (See Chapter 4, page 59) It appears that the writer believes that if the economy of Tenakee Springs were dependent on timber there would be major impacts, perhaps temporary logging jobs, as a result of the timber sale. Such short sightedness fuels the problems associated with large scale logging in the forest of Southeast Alaska. The Forest Service only focuses on the short term employment for loggers, the majority of whom are not or do not intend to be long-term residents of the area to be logged. It is doubtful that the Forest Service would fund a job training project to assist residents of Tenakee Springs to leave their community based, crafts-person, tourist oriented or subsistence jobs and become loggers. Loggers who would work seasonally for a few years and then move away as there would be no call any longer for their old jobs or their new jobs.

Visions of Tenakee Springs

The draft EIS contains numerous description of the city and citizens of Tenakee Springs. At Chapter 3, page 45 one finds, "Tenakee Springs has a

ES-28

FS Response

ES-26 The State of Alaska manages the funding formula for Federal Treasury (25 percent fund) payments to communities, not the Forest Service.

ES-27 The analysis of impacts to recreation and tourism markets in the Recreation section of Chapter 4 (Table 4-27) identifies a possible decrease of 2 percent average recreation/tourism income generated within the town of Tenakee Springs in Alternatives B, C, E, and F. This possible decrease would not be considered a major effect. Refer to the paragraph in the Community Effects section in Chapter 4 regarding Hoonah, a community which is more dependent on timber than Tenakee Springs. Hoonah, like Tenakee Springs, is also not expected to have any major direct, indirect, or cumulative impacts on their socioeconomics as a result of implementing the action alternatives. In both cases, and Angoon as well, the communities' dependence on commercial fishing and subsistence, rather than timber, are the primary factors influencing socioeconomics.

Whether the Forest Service would or would not fund a job training program as suggested is outside the scope of this project specific EIS.

FS Response

ES-28 This section has been re-written to accommodate concerns raised in your comments.

population of 100 people (1997 TLMP). The community considers itself unusual because members have agreed to limit their personal freedoms to maintain a certain lifestyle. Such limitations include prohibiting personally owned automobiles within the city, establishing set hours for using the natural hot-springs pool, and continuous dedication to remaining an isolated community. Tenakee Springs residents emphasize their uniqueness when advertising tourism, because they feel the unusual sells well and generates more economic income to stabilize their community." (Nelson 1996)

The foregoing is an interesting but highly subjective and unsubstantiated description of a town. Let us see if a personal freedom theme is a good fit for Tenakee Springs starting with the automobile limitation. Not many towns in Southeast Alaska can be reached by road. Within the cities, however, cars are in abundance and their streets for decades have been wide enough to accommodate automobile traffic. Such is not the case in Tenakee. That is an historical fact and not one recently created. The trail through town is not wide enough to accommodate automobiles. It is not logical to permit the presence of vehicles that won't fit, without mowing down people walking out the front doors of their houses onto the town's one street. Automobiles are prohibited not as a matter of personal freedom limitation but as a matter of public safety. That is not to say there are not all terrain vehicles a plenty on Tenakee Avenue. Sturdy golf carts as well as people around the downtown. Out on the trail east and west of the downtown, motorized vehicles cannot negotiate the narrow hiking trail surfaces. One doubts that any other town in Alaska would allow cars on trails that are not designed nor constructed for automotive use.

Tenakee Springs is actually at the forefront of alternative modes of transportation. Pedestrian and bicycle traffic are encouraged. The town relies on mass transit such as the ferry system for long distance travel. That type of transportation pattern should be commended not denigrated as a restriction on personal freedom. The federal government through the federal transportation legislation of ISTEA encourages alternative means of transportation as used in Tenakee.

So on to the personal freedom of being able to use the hot springs bathhouse whenever you want. The set hours for the bathhouse regulate when either men or women may use the bath. The bathhouse is available 24 hours a day, seven days a week. I think that the men's and women's hours posted on the

ES-28
(cont.)

bathroom door represent a Puritan ethic or an expression of the right to privacy rather than a restriction on personal freedom. Coed nude bathing might make Tenakee quite a unique town in Alaska. It is the norm to have public bathing facilities segregated by sex. The Tenakee Springs bathhouse is not a hot tub. It is the town's bathing facility. Public health requires that clothing not be worn in the pool. As a matter of common sense, public health, and civil deportment, not lack of a personal freedom, the bathers have designated separate hours of men and women to use the facility.

So what about Tenakee Springs' dedication to remaining an isolated community. If our desire is to be isolated, we have failed. We are no more isolated than most towns in Southeast Alaska. We have regularly scheduled plane service 7 days a week for most of the year and 6 days a week in the winter. There are charter flights available both for fixed wing aircraft and for helicopters including medevac services. We have telephone service in our homes and direct TV dishes dot the landscape. We have city-operated generators that produce electricity for much of the town. We have scheduled Marine Highway ferry service. Private yachts, fishing boats and cruise ships dock in Tenakee for varying lengths of time. We have barge service and a Juneau trucking company makes weekly deliveries via the ferry system. We receive the Juneau newspaper daily and have postal service six days a week. Admittedly it does take us longer to travel from our homes to New York City than it would for someone from Juneau or Sitka to do the same...about 40 minutes longer.

Tenakee Springs is a small town. That is true. But the author of the foregoing limited freedoms model of Tenakee Springs equates small and remote with isolated and isolating. The author makes the town sound as if it is fighting some type of progress as yet unidentified. The writer confuses true freedoms, such as freedom of speech or the freedom to exercise one's religious faith, with rules of social living or governmental regulations that ensure the public's health and safety. The writer also appears to be unaware of the current demographic trends in the United States. Time Magazine dated December 8, 1997, chose as its cover theme "Why More Americans Are Fleeing to Small Towns." The article regarding the movement to small towns lists reasons that many small towns are gaining new residents. These reasons include tourism, controlled growth, historic buildings, and recreational opportunities. Sounds like Tenakee Springs. The article does not mention the presence of temporary, large scale industry as having a positive effect on

ES-28
(cont.)

a town's economic and social health. In fact many of the towns discussed are recovering from the economic disasters caused by the failure of large industries in their areas.

Another description of Tenakee Springs is found in Chapter 3, page 66, "Tenakee Springs has a population of 111 residents. It is a popular "get away" area and favorite spot for boaters. A number of Juneau residents maintain second homes there. The 1990 median household income was \$18,125. Unemployment in 1994 for this census area was 10.6 percent, compared to 8.2 percent throughout Southeast Alaska (USDA Forest Service 1997a). The major employers are a highly seasonal fisheries and retail trade, and local government. (USDA Forest Service 1997a).

"Proposals for logging in areas close to Tenakee Springs have raised local interest, sentiment, and debate about what mix of values the forest should provide. Some people support a sustainable timber industry to diversify the economics of the local communities. At the same time, there is considerable opposition to clear-cut logging in an area considered to be in Tenakee Springs "backyard." Most, if not all, of the Project Area appears to lie within that area of concern. At the heart of the debate is a sincere and strong desire on the part of most people in the town to maintain their current lifestyle.

"Tenakee Springs residents and the City of Tenakee Springs want to see more emphasis placed on scenic resources, recreation, fish, wildlife, and subsistence. They want the current timber sale program reduced. They do not feel that jobs should be the reason for making forest use decisions. Neither residents nor the City want additional roads, log transfer facilities, or connection to existing roads. They feel that more roads mean more hunter access and fewer deer. They are opposed to emphasis on mining exploration and development, and favor additional Wilderness designation. They want the Forest Service to emphasize tourism, wildlife, recreation, and subsistence sectors of the economy. Both the City and Tenakee Springs Fish and Game Advisory Committee are concerned with the current and projected future declines in wildlife habitat capability in the area, especially along Tenakee Inlet."

The foregoing description of Tenakee appears to be more objective than the "limited freedoms" description. However, it presents information with little authority for the statements made. "Some people" support a sustainable

FS Response

ES-29 The community description is from the 1997 TLRMP EIS, pages 3-655 through 3-659.

timber industry. while "considerable opposition" exists to clear-cutting in the project area for the Indian River sale(s).. How this information was obtained is not clear. But even this supposed objective data is followed by a subjective conclusion that "at the heart of the debate is a sincere and strong desire on the part of most people in the town to maintain their current lifestyle." Here is a theme that will appear again and again in the draft EIS. Those people who identify logging as having an adverse effect on their homes and jobs are trying to maintain a "lifestyle." However, those people who want a sustainable timber industry are trying to provide jobs. It also appears that the term "sustainable timber industry" means the continuation of practices that often do more harm than good to the environment and which currently have no overriding economic benefits.

ES-29
(cont.)

It is mistaken to say that the people of Tenakee Springs are not concerned about jobs. They are indeed concerned about jobs...about the jobs that they hold as fishers, as guides, as retail merchants, as bakers, as commercial cooks, as massage therapists, as teachers, as cabinet makers, as carpenters, as welders, as office workers and in a multitude of other jobs that are needed to keep the community up and running. These jobs are threatened both directly and indirectly by the proposed timber sale. The above description of Tenakee Springs fails to mention that the interest in wildlife, subsistence, scenic beauty and habitat generally has to do with the increased reliance on the visitor industry in Tenakee. The draft EIS is faulty in that although it identifies the importance of tourism, recreation and other such activities, it does not make any attempt to ensure that these long-term jobs will not be lost. The jobs created by the proposed logging will be mainly held by people who will only live in the area for part each year for three to five years. The tradeoff is a tragic one.

ES-30

The foregoing discussion of the EIS' descriptions of Tenakee Springs is not an exercise in correcting unimportant details. In fact the descriptions of Tenakee Springs reveals the bias that the Forest Service has regarding how to weigh values in its decision making process. That bias is clearly adverse to the people who choose to live in small, geographically remote towns like Tenakee Springs. The goal should not be for a private industry to be subsidized by the federal government and as a consequence destroy many other private enterprises that do not rely upon federal largesse.

ES-30
(cont.)

Tenakee Springs will be able to benefit from the demographic changes ahead if the environment around it is not changed in such a way as to discourage tourism or restrict subsistence. It may be that there will be no high paying jobs or multi-million dollar businesses arising in Tenakee Springs. However, Tenakee Springs is a prime example of a small town that can serve the needs of a growing number of people who are willing to earn less money but are willing to do things for themselves. Residents may need to supply food from gardens and subsistence hunting as well as supplement subsistence activities with providing services to eco-tourists or participating in commercial or sportsfishing businesses. This socioeconomic plan for Tenakee Springs is not mirrored in the past but is forwarding looking based on new trends...not on outmoded concepts of resource extraction and depletion as a means for creating temporary jobs.

Roads

It is my understanding, though it is difficult for lay person to obtain this information from the draft EIS, that a new road will come close to connecting the Indian River road system and therefore Tenakee Springs with other roads on the island. The Forest Service may be keeping the letter, but not the spirit, of the federal law that requires the Forest Service to refrain from fostering a road connection with Tenakee. That residents of Tenakee Springs do not wish to be connected by road with other communities is well known. The town is not built to accommodate automobile traffic nor the other adverse effects that increased vehicle traffic brings.

ES-31

The cumulative effect of the multiple logging roads that surround Tenakee is to add more and more pressure from people outside the community to exercise their supposed right to drive their cars, or four wheelers or motorcycles into town. Neither the Forest Service nor the logging company contractor will enforce any prohibition on motorized vehicles making a de facto road connection between drainage areas. The roads themselves should be closed when the logging is completed. It is obvious that "administrative use" means that these roads will remain open. Gates are not monitored so that in essence the roads are open to all those who want to use them.

FS Response

ES-30 Comment noted.

ES-31 Refer to Response ADF&G-9. The Forest Service will be responsible for enforcing motorized vehicle restrictions, not the logging contractor.

Road Management Objectives (RMOs) for the Preferred Alternative include keeping mainline roads open at Maintenance Level 2, for administrative use only. Temporary roads would be closed. Drainage structures would be removed on roads 75004, 75012, 75007, 750071, 7508, 7501, 75021, 75028, and 7502. The LTF at Sunshine Cove could be removed per the MOU with Tenakee Springs and both gates on Road 7500 would be closed. The Record of Decision will include the Road Management Objectives (RMOs) for the Project Area Roads. See Appendix D in the Final EIS for additional information.

Gates can be closed; the gates on the Indian River Road are currently open based on requests from residents of Tenakee Springs.

FS Response

ES-32

Temporary roads appear to make the most economic sense. However, as logging itself will not bring in sufficient profit to the logging contractor, the credits for roads are used to provide the profit sought. The low market demand for the timber means that reconstruction of old roads and construction of new roads is the cash cow of the logging operations.

ES-32 Comment noted.

Subsistence and Wildlife Habitat

ES-33

One of the most important values to weigh in the determination of which alternative to select is the effect that any of the alternatives will have on subsistence. There are numerous statements in the draft EIS substantiating the cumulative adverse effects that logging has on the deer population. However, the conclusion is that since the Forest Service has decided there may be enough deer for subsistence, Tenakee Springs need not worry about the fact that there will be a loss of visitor income as Juneau hunters will no longer come to Tenakee for deer hunting season. So not only will the sale have an adverse effect on the deer population but will adversely effect tourism.

ES-33 See the Resource Findings portion in the Subsistence section of Chapter 4 for the subsistence findings.

ES-34 Refer to Biological Assessment and Biological Evaluation in Appendix B for additional information regarding humpback whales.

The Forest Service recognizes the interrelationships of forest ecosystems and the effect cumulative impacts may have on them. See the cumulative impact discussions in Chapter 4.

Not all adverse effects can be avoided, but adverse effects can be mitigated to the greatest extent practicable.

ES-34

The cumulative effect of loss of habitat around the entire Inlet is obvious. The Forest Service looks at it single issues cutting unit by cutting unit. The residents of Tenakee Springs see the ecosystem of Tenakee Inlet including the endangered humpback whales whose prey in the form of herring may well be endangered further by the use of a log transfer facility for the Finger Mountain sale. The Indian River sale will result in additional marine traffic that will have an impact on the whales. The log dumps when located in the areas where herring spawn will have an adverse impact on the prey of the humpback whales. But the Forest Service analysis does not put these impacts together. The environment is an interrelated system. But the Forest Service looks at small pieces only. And when the cumulative effect of habitat destruction cannot be denied, the conclusion is that the adverse effect cannot be avoided. If it can't be avoided, then the logging project can go forward.

FS Response

ES-35 Comment noted.

Conclusion

There is little in the draft EIS that commends it as a document that supports rational decision-making. The material contained in the document is difficult to read with any sense of data leading to conclusions. Rather it appears that conclusions are selected and then the data is molded to provide justification. Facts that don't fit are forgotten in the rush to sell timber to an arguably non-existent market. Alternative A is the only defensible decision based on this draft EIS. Selecting Alternative A at this time does not mean that the timber will not some day be cut but at least several years down the road there may be an economic benefit that outweighs the economic, social and environmental harm that the sale will create.

ES-35



February 18, 1998

Freedom of Information Act Officer
Tongass National Forest - Chatham Area
204 Siginaka Way
Sitka, AK 99835-7316

RE: 1. Request to be put on mailing list for all future timber sale decisions, E.A.s, E.I.S.s, and C.E.s
2. Please forward our comments on any timber sales now in 30 day comment period (comments attached)
3. FOIA request for economic analysis documents

Dear FOIA Officer:

This is a joint request on behalf of two non-profit environmental organizations: Forest Guardians and Forest Conservation Council. Both organizations are registered with the IRS as non-profit educational establishments. Our members include individuals and businesses throughout the United States whose interests are affected by management of national forest system lands. Our mission is to protect and restore the natural ecological conditions of such lands, so that the biological and economic values of these lands can be maintained in perpetuity. All correspondence to our organizations can be addressed to:

Forest Guardians and FCC
Attention: John Talberth
1413 Second Street
Santa Fe, New Mexico 87505

Our main phone number is: (505) 988-9126

If you have an old mailing address for Forest Conservation Council, please delete that address and send all future mailings to the address indicated above.

1. Request to be put on mailing list for all future timber sale decisions and E.A.s

Both Forest Guardians and Forest Conservation Council wish to be put on your mailing list to receive all future decision notices or decision memos for timber sales. This request applies to all timber sales that involve a commercial component, regardless of size. We wish to review and comment on these sales as early in the planning process as possible, so please also send us scoping notices as well as draft environmental assessments or environmental impact statements as they are published. Also send all final environmental assessments, environmental impact statements, and categorical exclusion notices for timber sales when they are completed.

If we are already receiving these notices from you, please disregard this request.

2. Please forward our comments on any timber sales now in 30 day comment period

In the event that there are timber sale projects currently in the 30 day comment period established by Forest Service regulations, please forward the comments below before the end of that comment period. We are submitting these comments to you because we cannot be assured that timber sale E.A.s that are now ripe for comment will reach us through the mail in time. We wish to preserve our rights to review any final timber sale decisions that are made, so it is necessary for us to provide some comments on these sales now. The comments below address economic issues that are common to all timber sales, regardless of size or location. If we have already commented on any particular sale now in the 30 day comment period, please supplement our comments with those provided below.

FS Response

FG-1 Your organization has been added to our mailing list.


FG-1

Forest Supervisor
Comments on any timber sales currently in the 30 day comment period

Forest Guardians and Forest Conservation Council are tax exempt, public interest organizations with individual and business members throughout the United States. We are concerned with the adverse economic effects of the national forest logging program, and the Forest Service's failure to quantify such effects at the project level or for the program as a whole. The logging program increases costs of water purification and filtration, decreases the value of private timberlands, unfairly competes against alternative fiber and building material businesses, increases wildfire risk, increases repair and maintenance costs for highways and public roads, and decreases the number of jobs in recreation, tourism, fisheries, and alternative forest products.

In addition, the ecosystem service values of standing forests, especially native forests, including their value in providing clean water, mitigating floods, supporting recreation, hunting, fishing, and wildlife viewing, enhancing long term forest productivity, and mitigating agricultural pests are systematically undervalued or not valued at all. Finally, the opportunity costs of the logging program, which includes both the uses forgone on areas logged as well as the alternative uses of the money now spent on the logging program have not been evaluated on a project basis or for the logging program as a whole.

Before a final decision is made on any current timber sales, the Forest Service has a duty to fully consider the external costs and opportunity costs of the logging program, and incorporate those costs into planning decisions so that the true costs and benefits of the program to the public can be determined. Thank you for the opportunity to comment, please keep us on the list to receive all future documents related to your timber sale program.

Sincerely,

John Talberth
Forest Guardians/ Forest Conservation Council

FS Response

FG-2 Economic analyses were accomplished in accordance with Forest Service policy and direction.



January 20, 1998

Lynn Shipley, Team Leader
USDA Forest Service
Tongass National Forest, Chatham Area
204 Siginaka Way
Sitka, AK 99835

Dear Mr. Shipley,

Friends of Glacier Bay, a grassroots conservation organization dedicated to preserving ecological integrity and opportunities for solitude in Glacier Bay National Park and the surrounding bio-region (northern Southeast Alaska), stands in opposition to the proposed Indian River Timber Sale near Tenakee Springs, on Chichagof Island.

Demographics and economics are rapidly changing in Southeast Alaska, to the point where trees have more value left standing, than fallen. We ask that you please reconsider this sale. Clearcutting this area behind Tenakee Springs will destroy much of the character of the little town, as well as deer habitat and karst geomorphology. If the people of Tenakee Springs wish the area to be cut, then arrange for them to do it on a small, incremental scale, something compatible with their lifestyle and needs for wood products. Northeast Chichagof Island already has too many roads. Ask the people of Hoonah what they think of clearcutting, and you will find a rising number of broken hearts and sad spirits. There comes a time when you lose more than you gain. We're there.

Friends of Glacier Bay asks the Forest Service to accept a progressive approach to this. What will be more valuable in the future: a short-term monetary gain from a quick timber sale, or the long-term integrity of a pristine community?

Thank you for listening. We'll be watching.

Sincerely,

Kim Heacock
President, FOGB

FS Response

FGB-1 Comment noted.

FGB-2 The alternatives include other harvest methods besides clearcutting. Refer to Table 2-3 for a summary of harvest by method in each alternative.

Timber harvest activities will occur three to six miles from the City of Tenakee Springs.

Refer to the Wildlife and Geology, Minerals and Caves sections in Chapter 4 for analysis of the impacts to deer habitat and karst geomorphology.

FGB-3 Refer to the Other Issues section, Small Timber Sales portion in Chapter 1.

FGB-4 Comment noted.

FGB-5 Refer to the Community Profiles section, Hoonah portion in Chapter 3 of this EIS and the Communities section, Hoonah portion, Community Comments part in Chapter 3 of the 1997 TLRMP EIS (page 3-566) for additional information from residents of Hoonah.

FGB-6 Comment noted.

FGB-1

FGB-2

FGB-3

FGB-4

FGB-5

FGB-6

FOREST SERVICE EMPLOYEES FOR ENVIRONMENTAL ETHICS
P.O. BOX 11615
EUGENE, OR 97440
(541) 484-2692

January 23, 1998

Gary Morrison, Forest Supervisor
Tongass National Forest, Chatham Area
ATTN: Indian River EIS
204 Siginaka Way
Sitka, AK 99835

Re: Indian River draft EIS

Dear Mr. Morrison:

Thank you for the opportunity to comment on the Indian River draft EIS.¹

Timber Demand

As you may know, FSEEE has appealed the Tongass Land Management Plan (TLMP), which sets the goals and objectives for this project area. You may obtain a copy of our appeal from your regional office. Among other things, the appeal asserts that TLMP fails to properly balance protection of non-timber uses with meeting market demand for timber over the planning period, as required by the Tongass Timber Reform Act (TTTRA). TLMP's failure results from its arbitrary designation of 267 mmbf as the allowable sale quantity (ASQ), an amount far exceeding the agency's own projections of timber demand over the planning period. See Brooks and Haynes, "Timber Products Output and Timber Harvests in Alaska: Projections for 1997-2010."

The Indian River Summary exhibits considerable misunderstanding of Tongass timber demand. The Summary states that "Projected annual sawlog demand for the next decade is 113 million board feet (mmbf) for the low scenario, 133 mmbf for the medium, and 156 mmbf for the high scenario," citing Brooks and Haynes (emphasis added). That's just wrong. The numbers the Summary quotes are total harvests, including cull and utility wood. Only a portion of these amounts is sawlog volume.

Notwithstanding the Forest Service's apparent intent to sell less timber in the up-coming several years than allowed by TLMP's overstated and illegal allowable sale quantity (ASQ), the damage the inflated ASQ does to the land base available for multiple-use protection is real and substantial. But for the inflated ASQ, the amount of old-growth forest, such as that proposed for logging in the Indian River draft EIS, available to be protected for fish, wildlife, water quality, and other resources would be substantially greater. The Indian River timber sale(s) would foreclose the opportunity to protect these forests in a revised TLMP, as FSEEE has requested in its TLMP appeal.

FSEEE's Tongass Land Management Alternative

FSEEE submitted a comprehensive land management alternative for consideration in the TLMP revision process. The Forest Service arbitrarily refused to consider our alternative among the range of

¹ These comments assume that Alternative B is the preferred alternative. The Summary is ambiguous in this regard as it states on page 18 that "The Forest Service has identified Alternative C as the Preferred Alternative," yet elsewhere refers to B as the proposed action.

FS Response

FSEEE-1 Your assumption regarding the preferred alternative is incorrect. Refer to Response ADF&G-5.

FSEEE-2 The typographical error referred to in the second paragraph has been corrected.

The modified 1997 Forest Plan is currently in effect as the appeal regulations (36 CFR 217) do not provide for stays. Consideration of 1997 TLRMP EIS appeal points was addressed in the 1999 ROD and is outside the scope of this project-specific EIS.

FSEEE-2

FSEEE-1

FSEEE-2 (cont.)

alternatives assessed in TLMP's final EIS. We have protested this violation of the National Environmental Policy Act in our TLMP appeal.

The Indian River timber sale would foreclose full consideration and implementation of FSEEE's alternative plan for the Tongass. For example, this sale proposes to log old-growth forests that FSEEE's plan proposes for protection and fails to provide the stream protection measures called for by FSEEE's alternative.

In sum, this sale's foreclosure of FSEEE's alternative land management plan, without adequate consideration by TLMP, violates NEPA. If you do not have a copy of FSEEE's alternative for review, please contact us and we will send you one.

Endemic Mammals

As FSEEE documented in its TLMP appeal, TLMP fails to provide for a viable population of endemic mammals and the marten. Insofar as there is habitat for these species that would be harmed by this timber sale, this sale violates NFMA's duty to protect viable populations of all native vertebrate species. FSEEE asks that the sale's supplemental EIS evaluate the presence of endemic mammals, marten, and their habitats in the sale area, the effect the sale would have on these species, and the adequacy of TLMP's protective measures for these species.

Clearcutting

TLMP defends clearcutting as the appropriate dominant silvicultural system on the Tongass. In this respect, the Tongass is unique among all 156 national forests as the only forest to buck the nation-wide trend toward decreased reliance on clearcutting. For 25 years, since the Church Clearcutting Hearings of the early 1970s, the U.S. Congress and American people have been steadfastly telling the Forest Service that they don't want their public lands clearcut. 16 U.S.C. § 1604(g)(3)(F)(i). And, for 25 years, the Forest Service has slowly been getting the message. Chief directive of June 4, 1992. Today almost all national forests have reduced their use of clearcutting substantially. Clearcutting on the national forest system has dropped from 283,000 acres annually in 1988 to 133,000 in 1993, and is projected to drop to 50,000 by 2000. Forest Service Program for Forest and Rangeland Resources: A Long-Term Strategic Plan (1995) at III-38. Today clearcutting accounts for fewer than 15% of all acres harvested and is projected to drop to 4% by 2045. *Id.*

FSEEE's TLMP appeal rebuts each of TLMP's defenses of clearcutting, as follows:

1. Forest health reasons:

Dwarf mistletoe is a ubiquitous, native western hemlock parasite that reduces tree growth, lowers fiber quality and provides an entry for decay fungi. Mistletoe creates important habitat niches for many species, including marbled murrelets. Generally trees out grow their initial mistletoe infections; the parasite rarely, if ever, is a direct cause of tree mortality. The Chief's 1992 policy allows clearcutting only where lands require "rehabilitation" from disease. Thus, dwarf mistletoe simply cannot be used to justify clearcutting. These stands do not require rehabilitation; they are healthy forests that sustain a wide variety of forest uses, including timber. To do so, as the TLMP does, allows the disease exception in the Chief's policy to swallow the general rule that clearcutting should be utilized only in rare circumstances. Nor does dwarf mistletoe adversely affect "forest health." It is a natural part of the biological diversity of the native forests of southeast Alaska. There is no evidence that dwarf mistletoe incidence has gone beyond the bounds of natural variability, nor does TLMP even attempt to evaluate this central concept of forest health and ecosystem management.

The Chief's policy allows clearcutting to "rehabilitate" stands adversely impacted by windstorms. TLMP argues for clearcutting because it decreases blowdown within harvest units (there's nothing left to blowdown), but admits the practice increases blowdown along cutting boundaries. *Id.* at G-8. Regardless, neither justification fits the Chief's criterion for rehabilitation after catastrophic blowdown. Nor does

blowdown adversely affect forest health. Down trees are a natural part of a healthy forest environment. They play important roles in nutrient recycling and wildlife habitat. In fact, TLMF requires down trees be left after logging in many management prescriptions. TLMF cannot on the one hand argue that blowdown is "bad" to justify clearcutting and on the other hand argue that it must provide for down logs because they are good for biological diversity.

Clearcutting is also allowed under the Chief's policy to reduce the adverse effects of logging damage, and TLMF argues that clearcutting does so. *Id.* at G-8. However, clearcutting is not "essential" to accomplish this end, as the Chief's policy further requires. Other silvicultural techniques, such as group selection, and other logging methods, such as helicopter logging, can accomplish the same reduction in logging damage as clearcutting. TLMF's failure to even consider these alternatives in its assessment of clearcutting violates the Chief's policy and NFMA's directive that clearcutting be used only where it is optimal.

TLMF argues that clearcutting should be permitted because it will improve forest productivity. *Id.* at G-8. Even if true, the Chief's policy does not grant any forest productivity exception for clearcutting. Nor is forest productivity a component of forest health. According to TLMF, Alaskan soils in old-growth forests have naturally "low soil temperatures, poor soil aeration, excess water, and deep humus mats." *Id.* Thus, by TLMF's admission, this is the natural, healthy condition of these forests. These forests are already healthy; they don't clearcutting to make them any healthier.

2. Clearcutting favors spruce.

TLMF provides no evidence that the Tongass suffers from a spruce shortage. Absent such a showing, there is no rational justification for believing that spruce needs whatever additional assistance clearcutting might provide over group selection. In fact, TLMF fails even to consider the option of group selection as a spruce reproduction technique, although there is every reason to believe group selection would offer the same "open environment" and "increased sunlight" provided by clearcutting.

3. Clearcutting requires less road development.

Road criteria are not among the factors the Chief's policy allows to justify clearcutting. Thus, this justification, even if true, violates the Chief's directive. Further, helicopter logging eliminates the need for many roads, regardless of silvicultural system.

4. Clearcutting provides viable harvest economics.

Once again, harvest economics is not among the factors the Chief's policy allows to justify clearcutting. Thus, even if true, this justification violates the Chief's directive. In any event, it is irrational for the Forest Service to use harvest economics to justify clearcutting when the agency loses tens of millions of dollars each year through its timber sales program. If the agency really cared about economic efficiency, it would simply stop selling timber on the Tongass.

5. Clearcutting provides excellent natural regeneration.

The quality of regeneration is not among the factors the Chief's policy allows to justify clearcutting, so long as minimum stocking levels are met. Ironically, by TLMF's own admission, clearcutting provides not excellent regeneration, but excessive regeneration. *Id.* at G-9 ("Stocking control is usually necessary between the ages of 15 and 20, and almost all sites require some degree of stocking control."). The fact is, TLMF fails to demonstrate that regeneration is a concern for group selection or other non-clearcutting silvicultural systems.

6. Clearcutting is compatible with the use of standard logging systems.

Again, no where does the Chief's policy speak to logging systems as a permissible justification for clearcutting. It defies commonsense that the reluctance of southeast Alaska's timber industry to invest in

FS Response

FSEEE-3 Comment noted.

appropriate logging equipment should justify TLMP's decision to violate national policy disfavoring clearcutting.

7. Clearcutting provides a viable timber management program.

This last justification is the lamest of all. First, once again, it is not among the Chief's permissible justifications. Second, it alleges that clearcutting is necessary to "meet our contractual obligations to the long-term Contractors." Well, there ain't none anymore. This is one more example of TLMP living in the past. Third, TLMP claims that clearcutting is necessary to provide a timber program large enough to meet demand. But, as discussed above, TLMP grossly overstates demand. Finally, TLMP claims that clearcutting "permits the allocation of large parts of the Forest for other than timber management purposes." But, so would reducing the allowable sale quantity to a level consistent with actual demand, without any clearcutting.

In sum, to the extent that the Indian River timber sale relies upon clearcutting, FSEEE believes that reliance is illegal, arbitrary and capricious, and violates the Chief's directive. We do not believe that the Forest Service can justify clearcutting under the law and challenge this sale's planners to address head on the points we raise above.

Summary

We recognize that district and area-level staff are faced with a difficult job of implementing a forest-wide plan that is poorly conceived and illegal. We would have preferred to have the issues we raise in these comments to have been acknowledged and resolved by TLMP. They have not been. It would be imprudent to proceed with on-the-ground implementation of a fatally flawed TLMP. Thus, we raise these issues here in the hope that the Forest Service will re-think TLMP and grant the relief we seek in our TLMP appeal. If it does not, we may appeal this timber sale or seek its stay pending resolution of our TLMP appeal.

Sincerely,

Andy Stahl
Executive Director

FSEEE-2
(cont.)

FSEEE-3

FS Response

GD-1 Refer to the Other Issues section, Small Timber Sales portion in Chapter 1.

GD-2 Refer to Response TK-4

GD-3 Comment noted.

GD-4 Refer to the Purpose and Need section, Market Demand portion in Chapter 1 and Response ADF&G-9.

GD-5 Comment noted.

JAN 12, 1998
LYNN SHIPLEY, TOMMY LAYDOR
USDA FOREST SERVICE
TONGASS NATIONAL FOREST, CHATHAM AREA
204 SIGINAKA WAY
SITKA, AK 99835

DEAR LYNN -

AS A FREQUENT USER AND VISITOR IN THE TONGASS SPRINGS AREA, I REQUEST THAT YOU SCRAP THE CURRENT PROPOSED TIMBER ALTERNATIVES AND CONSIDER SMALLER SCALE ALTERNATIVES THAT WOULD DIRECTLY BENEFIT SMALL LOCAL WOOD MANUFACTURING.

THE FOREST SERVICES ALTERNATIVES REFLECT THE OLD PULPMILL ECONOMY OF SE ALASKA WHICH IS NO LONGER A REALITY, LETTING THIS AREA ALONE WILL PROVIDE A WOOD RESERVE FOR PRESENT AND FUTURE LOCAL WOOD USE.

I ALSO HAVE CONCERNS FOR LOCAL SUBSISTENCE USERS WHO ACCORDING TO THE DEIS MAY BE RESTRICTED TO THEIR ACCESS OF SUBSISTENCE DEER.

I ALSO STRONGLY OBJECT TO ROAD BUILDING IN THE AREA TO ACCESS TIMBER WHICH IS NOT NEEDED, WHICH WILL LESSON THE GAP BETWEEN TONGASS AND HOONAH, TONGASS SPRINGS HAS STRONGLY AND CONSISTENTLY OBJECTED TO SUCH A ROAD THE AND THESE ALTERNATIVES WILL BRING THIS ROAD SYSTEM CLOSER TO BEING CONNECTED.

PLEASE LISTEN TO THE RESIDENTS OF TONGASS WHO WILL BE MOST STRONGLY AFFECTED BY THE NEGATIVE ASPECTS OF LARGE SCALE LOGGING IN THE AREA. THANK YOU!

Lenny Laydore
JERRY DEUGAN 617 KATIAN B-33
SITKA AK 99835

FS Response**HD-1** Refer to Response TK-1 and Response TK-2.**HD-2** A copy of your letter has been given to the Finger Mountain Timber Sale Interdisciplinary Team.**HD-3** Refer to Response ADF&G-9.**HD-4** Refer to Response TK-3.

1011 Shellpot Mt. Rd
Sitka, AK 99835
24 January, 1998

Forest Supervisor
Jungland National Forest Chatham Area
Attn: Indian River EIS
204 Signinaka Way
Sitka, AK 99835

Dear Sir:

This is my statement of support for the Chikagof Conservation Council in Sitka.

This community has pleaded with you in the past to avoid continually cutting when so much of the community depends upon the subsistence resources of the area, especially the deer. You surely are aware the loss of habitat is crucial not only for the deer but all of the wildlife. In addition there is also the threat of the "Finger Mountains" sale, not far away.

The proposed road construction would bridge all the ravines which which address prevent ATV access from the Game Creek area and the shared road system. This continual opening up of the land is not to the "belated" timber sale paid for by all the tax payers a typical Forest Service handiwork.

Sincerely,
Debra Drury

HD-1**HD-2****HD-3****HD-4**

FS Response

HR-1 Refer to the Alternatives Considered in Detail section in Chapter 2 for descriptions of the alternatives.

Refer to Chapter 4 for analysis of impacts to the tourist economy, deer hunting, karst lands, and fishing.

HR-2 Long- and short-term economics biological stability (biodiversity) were considered in Chapter 4.

A copy of your letter has been given to the Finger Mountain Timber Sale Interdisciplinary Team.

HR-3 Comment noted.

HR-4 Refer to the Other Issues section, Small Timber Sales portion in Chapter 1.

Timber made available for sale through this planning process will provide some of the raw materials the region needs to build its own future.

Jan 20, 1998

Lynn Shipley
USDA Forest Service
204 Saginaka Way
Sitka, AK 99835

Dear Mr. Shipley:

I understand you are proposing to clearcut nearly 29 million bf of timber near Tenakee Springs and also to build 10 more miles of new road. I believe this will have an adverse effect not only on the tourist economy of Tenakee Springs, but also on deer hunting, karst lands and fishing. Much is at stake and once its gone, its not going to do us any good for hundreds of years.

HR-1

I urge you to scrap this and other similar proposals, such as the Finger Mt. sale, and look instead to the long term economic and biological stability of the region.

HR-2

I have been an Alaskan resident for 20 years and am currently raising my 3 children. We depend heavily on subsistence hunting and fishing and tourism for our livelihood. We have hunted and vacationed in Tenakee and it would be a tragedy to lose it.

HR-3

Please consider the value of smaller scale alternatives which emphasize both selective logging and value added processes. Lets give this region a chance to build its own future.

HR-4

Sincerely,



Heidi Robichaud
Box 116
Gustavus AK 99826
907-697-2371

FS Response

JB-1 We are unclear from your comment what you are comparing Tenakee Inlet resource management activities to in order to come to the conclusion that a disproportionate share of timber, wildlife habitat, and recreational use has been "given up."

JB-2 Refer to Response PC-3.

January 14, 1996

Dear Mr. Shipley
Tenakee Inlet has already given up a disproportionate share of its timber, wildlife habitat and recreational use. Since I've come to know the area in 1972, roads and destruction have reached its tentacles up and down both sides of the inlet. When I bring visitors to Tenakee I no longer take pride in the wilderness I want to share. Instead I sadly try to answer their questions about why we are destroying such a beautiful environment. My answer is ring hollow. So few of us benefit from the logging. So many more stand to benefit from letting

JB-1

JB-2

JB-3

JB-3
(cont.)

regrowth occur without
additional clear cutting.
Please let the long term
planning of Tenakee Inlet
focus on recreation and
tourism and quality of
life. The loggers have already
"had at it". Now give it
back to the inhabitants & their work.

JB-4

Thankyou,
Jayanne Bloom
883 Basin Rd.
Juneau, AK 99801

FS Response

JB-3 Refer to the Management Prescriptions for the Indian River Project Area section, Land Use Designation Old-growth Habitat - Objectives portion in Chapter 1 that says that existing regeneration conifer stands will evolve naturally to old-growth forest habitats.

JB-4 Refer to the modified 1997 Forest Plan for Forest Service management goals, objectives, and desired condition in Tenakee Inlet.

FS Response

From: James Mackovjak
P.O. Box 63
Gustavus, Alaska 99826

January 19, 1998

To: Lynn Shipley, Team Leader
USDA Forest Service
Tongass National Forest, Chatham Area
204 Siginaka Way
Sitka, Alaska 99835

Re: Indian River Timber Sale

Dear Lynn Shipley:

I am writing to express my concerns regarding the Forest Service's proposed Indian River Timber Sale at Tenakee Inlet. My concerns are:

1. The current proposed alternatives are too large. With the cancellation of the long-term contracts, the Forest Service no longer has a need to provide huge amounts of timber. What the Forest Service needs to do, however, is have a small, selective logging timber sale which matches the needs of local small-scale wood products manufacturing. The idea of a "community development reserve" should be seriously considered. Tenakee Inlet has for too long paid the price for subsidized jobs created in Sitka, Wrangell and Japan.

2. The Forest Service must realistically consider and act to mitigate the cumulative impacts of clearcutting and roadbuilding on Tenakee Inlet. The effects of your proposed activities on Tenakee Springs economy, on commercial and sport fishing, on subsistence activities and on tourism and recreation must be considered. I am certain that any honest consideration of cumulative effects will show the true direction the Forest Service should take--much less timber and far fewer roads.

3. As a taxpayer and voting citizen, I am aware that the Forest Service's timber program, particularly on the Tongass, loses huge amount of taxpayer money while irresponsibly squandering our public natural resources. I strongly object to the Forest Service having any timber sales until it can show the public that the real present and long-term benefits outweigh the costs of its timber program. Realistic accounting measures--such as considering logging roads as a cost rather than an asset would help, but I realize that this is beyond your purview. I realize as well that Congress mandated this shoddy method of accounting, but Forest Service personnel, in my mind, have been all too zealous in embracing it.

The short of this letter is that the Forest Service should drop the Indian River Timber Sale (and its timber program) until it can prove to the public that it can have a responsible timber program.

Sincerely,

J. Mackovjak
James Mackovjak

JM-1 Comment noted.

Refer to Response JR-2, the second paragraph in Response TK-1, and Response JW-1.

JM-2 Refer to Response JS-5.

JM-3 Refer to Response TK-3.

JM-4 Comment noted.

JM-1

JM-2

JM-3

JM-4

Jan-13-98 23:00 SE Energy Consulting

1

P.01

Lynn Shipley, Team Leader
 USDA Forest Service
 Tongass National Forest, Chatham Area
 204 Signika Way
 Sitka, Alaska 99835

Dear Lynn,

I am writing concerning the Indian River Timber Sale near Tenakee. I am opposed to this sale and would like to see it halted. I have visited Tenakee several times and have observed the clearcutting that has occurred around the community. Past clearcutting has impacted the viewshed and subsistence resources of the community and I feel that no more clearcutting should occur in the Tenakee Inlet area.

I have the following specific comments:

- The Forest Service should stop this sale and consider smaller-scale alternatives that provide wood for local processing. The logging method should be based on selective harvesting.
- The preferred alternative for any logging in the area should fully protect ecosystem for a thriving deer population. Subsistence needs should be prioritized in this area.
- More roads should not be constructed in the Tenakee area, especially any roads that extend the Indian River Road system closed to the Game Creek road.
- The DEIS should consider all impacts that logging has had and will have in the Tenakee Inlet area. There are several areas that have been extremely logged in the past. This places extremely strong pressure on the remaining ecosystem to support a viable wildlife population. Impacts of this stress on the ecosystem must be considered.
- The economic needs of Tenakee should be a priority of any timber sales and the sales should be designed around their needs. Small scale wood processing requires a local "community development reserve" for future harvesting of wood for small scale operators.
- The DEIS should fully protect any karst areas from logging so that this vulnerable habitat is protected.

Thank You,



Jim Rehfeldt
 Juneau

FS Response

JR-1 Comment noted.

JR-2 Refer to the Other Issues section, Small Timber Sales portion in Chapter 1. Refer to the Issues to Be Addressed section, Issue Area 7 - Alternatives to Traditional Clearcutting portion in Chapter 1 and the Comparison of Alternatives by Identified Issue section, Issue Area 7 - Alternatives to Traditional Clearcutting in Chapter 2.

JR-3 Refer to Response RJE-1 and Response TK-2.

JR-4 Refer to Response ADF&G-9.

JR-5 Refer to Response JS-5.

JR-6 Refer to the Other Issues section, Small Timber Sales portion in Chapter 1.

Refer to the second paragraph in Response TK-1 and Response JW-1.

JR-7 Refer to Response TCP-1, Response TCP-3, and Response TCP-4.

FS Response

- JS-1** Refer to Response LT-1.
- JS-2** Refer to the Other Issues section, Small Timber Sales portion in Chapter 1.
- JS-3** Refer to Response RJE-1.
- JS-4** Refer to Response ADF&G-9.
- JS-5** Refer to the cumulative impact portions within the resource sections in Chapter 4 for long term impacts of this and other timber sales in Tenakee Inlet. Refer to Appendix C, Mitigation Measures; Appendix I, Road Cards; Appendix J, Unit Cards, and the Record of Decision for this EIS for mitigation measures.

Dear L. Shipley, Re: Indian River Sale Jan. 11, 1998

I use you to design this timber sale to suit the economic needs of the closest town, Tenakee Springs. Please consider smaller-scale alternatives which use selective logging.

Subsistence and sport use of deer in the area deserve full protection from large scale timber harvest. No more permanent roads should be built in the area or roads extending the Indian River rd. system closer to the Game Creek Rd. per sec. 106 of the TTRA.

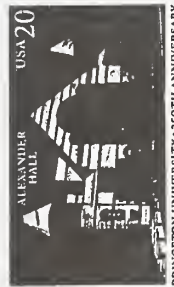
The long term impacts of this sale and others planned for Tenakee Inlet must be mitigated. Sincerely, Jeff Abma

Jeffrey & Susan Sloss
740 5th St.
Juneau, AK 99801-1017



JAN 15 1998

CHATHAM AREA
SUPERVISORS OFFICE



Lynn Shipley, Team Leader
USDA Forest Service
Tongass Nat'l Forest Chatham Area
284 Siginaka Way
Sitka, AK 99835

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FS Response

01/20/98 TUE 11:06 FAX 1 907 736 2243 WISENBAUGH

JW1-1 Refer to the attached letter, dated March 13, 1998.

To: District Ranger Jim Franzel and
Indian River Planning Team
From: John Wisenbaugh
Re: Indian River Timber Sale DEIS
January 19, 1998

I would like to add some additional comments to my oral testimony given in Tenakee Springs on January 13, 1998. At that time I referred to the creation of *Community Development Reserves*. During scoping I mentioned the possibility of setting aside a significant volume of timber in the Indian River project area for the use of Tenakee Springs businesses. Individuals present at that scoping meeting did not seem to think that was beyond the realm of possibility. I was disappointed not to see mention of it in the DEIS. Indeed, Senator Stevens and Congress created the precedent by allocating a percentage of the public resource ground fish quota to individual communities in Western Alaska. I find the idea of using a resource to create permanent jobs in harmony with other uses of the forest (recreation, tourism) to be infinitely preferable to intensive logging providing a couple years employment for non-resident loggers and mill workers hundreds of miles away.

There has been some recent interest among local business and crafts persons in creating businesses that would capitalize on the unique qualities of old growth wood. Your phrase "collaborative stewardship" indicates an opportunity to create a *Community Development Reserve* of sufficient volume to support this industry in perpetuity. The Collaborative Stewardship program currently being implemented seemed to offer the opportunity to create a reserve of this type in the Indian River Project area. To fulfill the vision of local entrepreneurs, the reserve would require sufficient volume to sustain harvest of timber with old growth characteristics over the very long term (i.e. 300-year rotation). It would be important to local businesses currently being envisioned that there be a significant volume of all species, particularly Alaska yellow cedar.

This project area, because the log transfer facility is within the city limits, is the most reasonable place to provide this sort of enhancement of opportunity for the City of Tenakee Springs. I ask you to please, for the time being, select the no action Alternative A. Collaborate with us as stewards of our national treasure.

Cc: City of Tenakee
Chicagof Conservation Council
Southeast Alaska Conservation Council
Tongass Community Alliance
Jim Franzel, District Ranger

JW1-1

United States Forest Service
Department of Agriculture

Alaska Region
Tongass National Forest
Fax (907) 747-4331

Sitka Ranger District
201 Katlian, Suite 109
Sitka, Alaska 99835
Phone (907) 747-4220

File Code: 1900

Date: March 13, 1998

John Wisenbaugh
P.O. Box 512
Tenakee Springs, AK 99841

Dear John,

Thank you for your January 20, 1998 fax in which you asked for my thoughts on "community development reserves." When we visited on the phone the other week, I shared some of my thoughts and also promised to followup with a brief letter.

The term "community development reserve" is something I've only recently heard. Comments by the City of Tenakee Springs in response to the Indian River Draft EIS mentioned "frequent repeated requests for such reserves that have been ignored by the Forest Service" surprised me. I reviewed the notes and input for the Indian River and Finger Mountain scoping meetings and do not find any mention of this term or even the concept. A review of the Tongass Land Management Plan and EIS public comment from Tenakee did not find any reference to this concept either.

I thought it would be helpful if I gave you some background about our two step planning process as well as the "Special LUD (Land Use Designation) III" that was used in the original Tongass Forest Plan. Preparing a Forest Plan is the first step in planning and this is where we allocate or zone areas of the Forest to LUD's for different uses. These "zoning" designations guide all natural resource management activities for the next 10-15 years. In May 1997, the revised Tongass Land Management Plan (TLMP) identified 19 types of LUDs (the original TLMP identified 5 LUDs) and the standards and guidelines to manage them. The original Tongass Land Management Plan identified a LUD III - Special near Tenakee Springs.

Areas allocated to LUD III in the original TLMP were managed for a variety of uses. The emphasis was on managing for both amenity and commodity-oriented uses in a compatible manner to provide for the greatest combination of benefits. The purpose of the Special variation was to minimize impacts on visual and recreation resources in areas directly adjacent to communities, such as Tenakee Springs. Timber management activities, such as firewood sales and free use for house logs had to be compatible with local recreation and visual resource uses, and any timber that was sold did not contribute to the allowable sale quantity. This LUD III - Special was replaced in the revised TLMP with Old-growth Habitat and Timber Production LUDs (prescriptions). In Old-growth Habitat LUDs, forest land is classified as unsuitable for timber production, although personal use wood harvest and salvage of dead or down material may be allowed. Timber Production LUDs provide for wood harvest; however, most of this LUD that was formerly in the Special area, appears to be high

vulnerability karst as mapped by Harza Northwest, Inc. Karst lands found to be of high vulnerability will be removed from the commercial forest lands suitable land base.

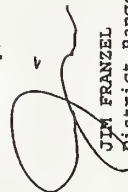
The second step in the planning process is the project specific proposal. Examples of this step include the Indian River and Finger Mountain Timber Sale Projects, and the Indian River Fish Pass Project. The former are currently undergoing analysis in environmental impact statements when a significant impact to the human environment is likely to occur. The latter was analyzed in an environmental assessment that determined that there was no significant impact.

I understand the concept of "community development reserve" to mean that some part of the National Forest would be set aside or reserved for development for the residents of a specific community, such as Tenakee Springs. Designating a community development reserve would likely be a land allocation. Land allocations are made at the Forest planning level, not the project planning level. The Indian River and Finger Mountain Timber Sale Project cannot consider a land allocation for a community development reserve because it is outside the scope of their project specific analysis.

Recently, I heard about an allocation called "adaptive management area" that was specified around a number of lower 48 rural communities. This was accomplished through the recently adapted North West Forest Plan, in Northern California, Oregon, and Washington. The idea with these adaptive management areas is that local communities will play a large role in deciding permissible activities. It doesn't restrict activities to residents of specific communities however. Please call me if you would like to discuss this concept further.

I'm also not sure that a community development reserve would be something that the Forest Service could legally implement. This is because the Forest belongs to and is managed for all United States citizens. I don't think we could give an exclusive use to a particular group (such as the resident of Tenakee Springs) because that would take an act of Congress. I hope that this responds to your request for my thoughts on community development reserves. Please contact me if you have other questions or ideas to discuss.

Sincerely,



JIM FRANZEL
District Ranger
Sitka Ranger District

cc: Mayor Louis Heins, City of Tenakee Springs

980202 1325 PL 1950 LS

Whitestone Logging, Inc.

P.O. Box 389
Hoonah, Alaska 99829
907-945-3626

Forest Supervisor
Tongass National Forest, Chatham Area
ATTN: Indian River EIS
204 Signaka Way
Sitka, Ak 99835

December 30, 1997

Sent by Fax 907-747-4331

Dear Sirs:

Your concern about the possible negative impacts of a timber sale on the lifestyle of the residents of Tenakee Springs is laudable. If the Forest Service plans to take timber from a bulkhead at Sunshine Cove, which is within the municipal boundary of Tenakee springs, and to build an LTF at Ten mile creek, the city with their local chapters of SEACC and the Sierra Club, will tie you up in court. As we know, the Sierra Club Legal Defense Fund gets paid for suing the government whether they win or lose. They are awarded legal fees on the amount of points they score in court, so in order to mitigate the damages to the U.S. Taxpayer and to avoid a deficit timber sale, it would be wise for the Government to re-configure the Indian River Timber Sale in a manner that would either kill the possibility of a timber sale in that area until the present population of Tenakee Springs is recycled or allow the sale to proceed and to benefit another community that is dependent on Federal Timber Sales.

KJW-1

KJW-2

KJW-3

We recommend that you re-configure the sale and connect the Indian River road system (7500), with the Upper Game Creek road system (8502) and take the timber to the Long Island LTF near Hoonah, or connect the 7500 road to the Freshwater bay system via the (85082 or 85083) road and take the timber out of the Kennel Creek LTF. This would have the following benefits.

- o It would connect the Hoonah Ranger District directly to the timber sale, avoiding the expense of barging administrative vehicles to the sale. It would make the Ranger district more viable and enable the government to make full use of the considerable investment in housing and office space that has been built in Hoonah. It would avoid the expense of trying to house government personnel on site and avoid the risk of flying government personnel to a remote site.

- o In Hoonah, Forest Service personnel are integrated into the community and are involved with the Fire Department, the EMT service and participate in community functions. Local people are employed by the Forest Service and the Federal presence is

FS Response

KJW-1 The Forest Service and City of Tenakee Springs worked collaboratively to develop the Memorandum of Understanding Between the City of Tenakee Springs and the USDA Forest Service for the Short-term Use of Tenakee Springs' Tidelands at Sunny Cove.

KJW-2 Comment noted.

KJW-3 Refer to the Alternatives Eliminated from Detailed Study section in Chapter 2 and Response ADF&G-9.

an important part of the local economy. In Tenakee Springs the government is not welcome nor wanted.

o Hoonah has a growing wood products industry. D & L Woodworks has purchased land from the city of Hoonah and is planning to expand their operations. Icy Straights Lumber Co. has installed a new headrig and Huna Totem Corporation has leased additional land to the company for expansion. Both of these mills, that are locally owned, are dependent on public timber. The City of Hoonah supports a sustainable local forest products industry. The growing Hoonah forest products industry supports the local economy by employing local people, and using the local infrastructure to manufacture wood products and move them to market. The addition of the Indian River road system to the road system to Hoonah would add sustainability to the wood products industry and to the economy of Hoonah.

KJW-3
(cont.)

o To preserve the isolated nature of Tenakee Springs and to comply with that section of the TTRA which mandates that the City of Hoonah and the City of Tenakee Springs not be connected by road, that section of the 7500 road between the junction of the 7501 road and the municipal boundary of Tenakee Springs be obliterated by the removal of all bridges and culverts in that section. This would still enable the residents of Tenakee to use the drainage for hunting, and also enable the Forest Service to manage most of the area in the drainage for timber production. Future TSI and planting crews can be housed in Hoonah and transported to the job in a more economical manner than be flown in or have to camp on site.

KJW-4

o If the Forest Service is serious about putting up a timber sale rather than going through expensive litigation with Tenakee and the Sierra Club, we would suggest some consultation with our Congressional delegation may be in order. We note, with some cynicism, that the area encompassed by this timber sale was NOT designated as an Old Growth Habitat area, even though the area between the sale and Tenakee Inlet, which had been "A" frame logged in the sixties received this designation. The TLMP team realized that litigation would create a de facto Old Growth Habitat area, while still keeping the area in the timber base.

KJW-5

o Thank you for the opportunity to comment on this timber sale. We recommend Alternative C with the above modifications.

Sincerely



Keith J. Walkey

FS Response

KJW-4 We are unclear what consultation with the Congressional delegation has to do with this project.

Old-growth Habitat land use designations are classified as unsuitable for timber production (See modified 1997 Forest Plan, Timber Resource Planning: TIM112, page 3-80).

KJW-5 Comment noted.

cc Hoonah Ranger District
Mayor and City Council Hoonah
Congressman Frank Murkowski
Congressman Don Young
Congressman Ted Stevens
D & L Woodworks
Hoonah Indian Association
Alaska Forest Association
Fred Baxter
James Caplan

FS Response

L&PC-1 Comment noted.

L&PC-2 All of the regeneration units in the Project Area have been certified as re-stocked (i.e., at least 300 conifer stems per acre) and are growing at predicted rates. Re-stocking surveys were conducted by silviculturists on-the-ground, rather than from the air or by aerial photographs.

L&PC-3 Refer to Response MB-1.

L&PC-4 Refer to Response ADF&G-9.

L&PC-5 Comment noted.

January 14, 1998
17105 Glacier Hwy.
Juneau, AK 99801

Lynn Shipley, Team Leader
USDA Forest Service
Tongass National Forest, Chatham Area
204 Signaka Way
Sitka, AK 99835

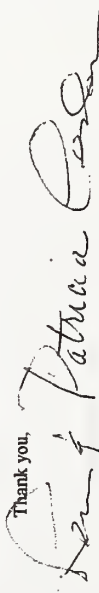
re: Tenakee Inlet logging

Dear Mr. Shipley,

We have been visiting Tenakee Inlet for the last fifteen years and have become well acquainted with the Inlet, Tenakee Springs and its interesting and delightful residents. Our contact has been both summer for boating, fishing and visiting and winter for deer hunting. We are dismayed with the proposed Indian River timber sale, especially its scope and the intended clear cutting. This will adversely effect the Inlet as a whole and specifically the town of Tenakee Springs and its inhabitants. The existing clearcuts with poor re growth dominated by deciduous trees such as alder, etc. speak to the fragility of the area. Additionally the deer population and quality habitat for deer and other species will be adversely impacted.

Of concern as well is the proximity of the proposed road extension to the Hoonah system. The likely access of Hoonah-sided motorized vehicles to the Tenakee Inlet drainages would further hurt not only the ecosystem, but also the current residents of and recreational visitors to Tenakee Inlet. Please delete or redesign the proposed sale to benefit all involved.

Thank you,



Len and Patricia Ceder

L&PC-1

L&PC-2

L&PC-3

L&PC-4

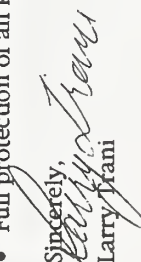
L&PC-5

To: Lynn Shipley, Forest Service
 From: Larry Trani/Outercoast Charters
 2008 HPR
 Sitka, Ak. 99835
 Date: January 13, 1998
 Re: Indian River Timber Sale

Dear sir:

As the area of the Tongass that I use for recreation, subsistence and business purposes continues to shrink due to logging practices I would like to offer the following as my comments concerning the above planned sale.

- Design this sale to meet the economic needs of Tenakee Springs first. Consider how the logging will impact the tourism. Establish a community development area for local small-scale wood products manufacturing.
- Look at the impacts past logging is having on the people that live in Tenakee Springs. Consider the other planned sales, i.e. Finger Mountain Sale, and think about the negative impacts those sales will have on the local residents. Hasn't there already been enough logging in the area??
- The subsistence way of life in Tenakee Springs should be fully protected. The proposed alternatives should be thrown out and replaced with smaller sales, i.e. selective logging or group selection sales, thereby providing for the style of life the people in Tenakee Springs want/need.
- Keep the roads out of the sale area!
- Full protection of all karst areas is another must.

Sincerely,

 Larry Trani

FS Response

LT-1 Refer to the Economics and Social Values section in Chapter 4 for additional information regarding economics.

Refer to the Recreation Commercial Uses portion in the Recreation section in Chapter 4 for impacts to tourism.

Refer to the second part of Response TK-1.

LT-2 Refer to the cumulative impacts portion of each of the resource sections in Chapter 4.

Refer to Response SEACC-20. A copy of your letter has been given to the Finger Mountain Timber Sale Interdisciplinary Team.

Refer to the Purpose and Need section in Chapter 1, Appendix A, and the How the Indian River Project Area was Selected section in Chapter 1 for additional information regarding timber market demand and why the Indian River area was selected for timber sale planning.

LT-3 Refer to Response RJE-1.

Refer to the Other Issues section, Small Timber Sales portion in Chapter 1.

LT-4 We are unclear how roads are to be kept out of the sale area when there are already over 23 miles of existing roads in the Project Area where the sales are to occur.

LT-5 The Federal Cave Resources Protection Act of 1988 does not provide for full protection of all karst areas as the person commenting suggests. That is not to say that karst and cave resources will not be protected; the modified 1997 Forest Plan standards and guidelines for karst and caves will be implemented (See modified 1997 Forest Plan, pages 4-18 through 4-20).

FS Response

M&AJ-1 The Final EIS includes many modifications, corrections, and clarifications over the Draft EIS as a result of comments such as yours.

M&AJ-2 Refer to Appendix C, Recreation Mitigation Measures for requirements to maintain clear access to the East Tenakee Trail during sale operations.

M&AJ-3 There may be safety related short-term closures of the Indian River road system while timber management activities are in progress. The road system will be available for the activities you mention when the sale activities are in winter shutdown or when the sale ends.

1-15-98

DEAR Kymon Shipley:

As long time SE residents and also residents of Tenakee Springs for portions of the year we are writing to urge that the proposed Indian River Timber Sale be cancelled or modified.

Our Tenakee home is at Columbia point so we use the East Tenakee Trail for fast travel to and from town - a new log dump etc. etc. has the potential of disrupting this vital access. The weather frequently makes skill travel dangerous so this trail is vital.

We walk the present Indian River road @ least several times a year - using it to pick berries and our son does extensive deer hunting on the adjoining mts. These activities would no longer

M&AJ-1

M&AJ-2

M&AJ-3

M&AJ-3
(cont.)

be possible. Many other Tenakee residents also do these things because of prior logging in the inlet and future plans, the long term effects of all these timber sales will have a major impact on the user Tenakee residents make of their area for a variety of subsistence and recreational activities. It should be easily apparent to any visitor how important these activities are in a community without many employment ~~activities~~ opportunities. Small sales could enable local residents to utilize timber for small scale manufacturing.

M&AJ-4

M&AJ-5

In addition the prospect of possible ATV access via the Game Creek road is scary. We are all aware of the major impact extensive public and private land logging and had on resources

M&AJ-6

FS Response

M&AJ-4 Refer to Response SEACC-20.

M&AJ-5 Refer to the Other Issues section, Small Timber Sales portion in Chapter 1.

M&AJ-6 Refer to Response ADF&G-9.

FS Response

M&AJ-7 Refer to Response TK-3.

3M&AJ-6
(cont.)

in the Hoovah Ranger district,
access to INDIAN River road could
transfer heavy use of resources
into Tenatoes backyard.

We sincerely hope you will
reconsider the INDIAN River
Sale as proposed. It is upsetting
that we as taxpayers are
being forced to subsidize a
Sale that will be destructive
to our way of life.

M&AJ-7

Mac + Amy Johnson

Mac/Amy Johnson
423 VerstaVA
SITKA AK 99835

FS Response

MB-1 Refer to the Wildlife and Subsistence sections in Chapter 4 for impacts to deer habitat.

MB-2 The debate over who should be able to hunt deer in Alaska is outside the scope of this project specific EIS.

MB-3 Refer to Chapter 4 in this EIS for additional information regarding impacts to other resources.

MB-4 Refer to Responses SEACC-8 and MC-4.

MB-5 Refer to Response MB-4.

MB-6 The alternatives in this EIS provide a range of timber volume to be sold in two or more sales.

A new export policy was issued by the Regional Forester on March 27, 1998. The new policy allows export of yellow cedar logs; export of other tree species logs will be considered on a case-by-case basis if processing facilities are not available in Alaska. Refer to Response SEACC-45 for additional information.

Silver King Marine

Mike Bethers
P.O. Box 210003
Auke Bay, Alaska 99821
(907) 789-0165 (Ph. & Fax)

January 18, 1998

Lynn Shipley
USFS, TLMF Plan
204 Signatka Way
Sitka, Alaska 99835

Dear US Forest Service:

We have hunted the Tenakee Inlet area for several years and would like to make these comments on the "Indian River Timber Sale".

First of all, Tenakee Inlet has already been subject of extensive clear cutting for several years. After several years hunting the Inlet it is very easy to see the impacts of clear cut timber harvest on deer activity. Many of the older clear cuts in Tenakee Inlet receive little, if any use by deer, and that is only to pass through the area.

Timber harvest in Tenakee Inlet and other parts of N.E. Chichagof has had great impact on deer populations. Already, resident Alaskans have been separated into two classes of hunters with unequal access to the common property deer resource. This is due to reduced numbers of deer, which is due to past timber harvest. Potentially, one class of hunters (sport) could be prevented from ever hunting a common property resource on these public lands.

Given that Tenakee Inlet deer habitat has already been substantially degraded by clear cutting, we feel its time that other public uses of the area be recognized and given better protection during timber harvest. We are not opposed to logging in the Inlet, however we are definitely opposed to further clear cutting. We recommend that:

- 1). Only selective cutting be used in timber harvest in Tenakee Inlet or the Indian River Sale.
- 2). Only areas already roaded should be entered and no new roads should be constructed.
- 3). Reduce the amount of timber to be sold and require the logs to be processed in Southeast Alaska.

MB-1

MB-2

MB-3

MB-4

MB-5

MB-6



Marine Wildlife Viewing



Professional Sportfish Guiding

MB-7

Logging should have no higher priority than any other use of our national forest. We feel the above recommendations would provide for timber harvest without permanently degrading the forest for other public use.

MB-8

Thanks for the opportunity to comment. Please keep me on your mailing list.

Respectfully,


Mike Bethers

FS Response

MB-7 Refer to the Land Use Designations (LUDs) section in Chapter 1 for management goals, objectives, and desired condition within the Timber Production LUD.

MB-8 Your name and address have been added to our mailing list.

FS Response

- MC-1** Comment noted.
- MC-2** Refer to the Fish and Fish Habitat, Wildlife, and Subsidence sections in Chapter 4 for impacts to the fish, brown bear, and deer resources.
- MC-3** Refer to Table 2-3 for a summary of harvest by method in each alternative.
- MC-4** Refer to Response MC-3. Additional information regarding selective (uneven-aged) harvest methods is in the Issues to be Addressed section, Issue Area 7 - Alternatives to Traditional Clearcutting portion in Chapter 1; Considerations in the Development of Alternatives section and Comparison of Alternatives by Identified Issue section in Chapter 2.
- Refer to the Other Issues section, Small Timber Sales portion in Chapter 1. This EIS is consistent with the modified 1997 Forest Plan.
- MC-5** A copy of your letter has been given to the Finger Mountain Timber Sale Interdisciplinary Team.

1/16/98

Lynn Shipley, Team Leader
USDA Forest Service
Tongass National Forest,
Chatham Area

204 Seginaka Way
Sitka, AK 99835

Lynn Shipley -
Please excuse the handwriting.
I am writing in opposition to the Indian River
timber sale near Tenakee Springs.
It is my understanding this will involve extensive
road building near the Indian River drainage which
will affect fish habitat and bear habitat
as well as the future of deer hunting in that
specific area.

I object to clear cutting in general and clear
cutting in the Indian River area in particular.
I wonder if any consideration was given to selective
logging which would reduce the road feet cut
and give local mills and craftsmen a oppor-
tunity to participate, consistent with the new
Tongass Clear guidelines.

I urge you to consider the above when designing
other timber sales planned for Tenakee Valley,
including the Finger Mtn. Timber Sale in Crab Bay.

Respectfully submitted

Mike Drummond

MC-1

MC-2

MC-3

MC-4

MC-5

FS Response

MEM-1 A copy of your letter has been given to the Finger Mountain Timber Sale Interdisciplinary Team.

PAGE 01

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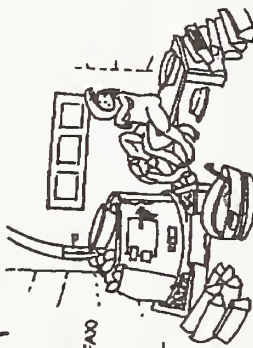
RIE MUNOZ

20 January 1998

Marie Muñoz

622 4th Street Juneau, Alaska 99801 • 907/586-1588 - 586-1024(FAX)

Lynn Shipley
Team Leader, USDA Forest
Service
Tongass Nat Forest
Chatham Area



Dear Lynn - I'm opposed to the Indian
River Timber Sale as well as the Finger
Mountain Timber Sale.

Thank you. Sincerely
Marie E. Munoz
622 4th St.
Juneau, Alaska 99801

MEM-1

CENTRAL	
AG	AG
ENV	ENV
FIN	FIN
GEN	GEN
HEA	HEA
IND	IND
PLN	PLN
PRO	PRO
RES	RES
SEC	SEC
TRA	TRA
WAT	WAT
WIL	WIL
JAN 2 9 1998	

1-15-98

Forest Supervisor

I am writing in opposition to the Indian River Timber Sale. I feel that you have logged enough in the Tenakee area. There are other uses for the forest besides logging, and I don't think that you are considering those uses. Tourism and recreation are important uses and they are negatively affected by clearcutting. Even now, it is difficult to find a place in Tenakee Inlet where there are no visible scars on the hillsides, and no roads visible. There is also the wilderness value, that you are eliminating, for what? The economics and the demand for the timber just isn't there. Certainly, just letting the timber stand should be a reasonable alternative. It has value as a pristine old-growth forest. You are not considering that value!

I do not want to see any more road building in this area. I especially do not want to see any further road building between Game Creek and Indian River. This will make it possible for ATVs to eventually get from Hoonah to Tenakee Springs. This would ruin Tenakee Springs. I hope you will take my concerns into consideration, when decisions are being made.

Marilyn F. Taylor

Marilyn F. Taylor

FS Response

- MFT-1** Refer to the Recreation section in Chapter 4 for impacts to tourism and recreation.
- MFT-2** Refer to Response M&MK-2. A short section of road will be visible near the LTF site until vegetation grows on and around it.
- MFT-3** There are two Congressionally designated roadless areas (Kadashan and Trap Bay) and several Old-growth Habitat land use designations that will maintain wilderness values in Tenakee Inlet (See modified 1997 Forest Plan map).
- MFT-4** See the Purpose and Need section, Market Demand portion in Chapter 1 for more information.
- MFT-5** Alternative A, the No Action alternative, considered "just letting the timber stand."
- MFT-6** Refer to Response ADF&G-9.
- MFT-7** Comment noted.

Lynn Shipley, Team Leader
USDA Forest Service
Tongass National Forest, Chatham Area
FAX: (907) 747-4331

January 20, 1998

Dear Ms. Shipley:

My wife and I are frequent visitors to Tenakee and are very concerned about the impacts to that area as a result of the proposed Indian River and Finger Mountain Timber Sales. Both these areas now offer critical habitat to bear and deer that would be devastated by logging/road-building on the scale proposed.

M&MK-1

M&MK-2

The Indian River Sale is simply too close to town and would ruin the scenic vistas and solitude that draw us there. It would also virtually connect swaths of clear cuts from the Hoonah area with Tenakee which would increase the chances for a cross-island access route and reduce viable habitat for deer and bear. It appears to us that the Hoonah cuts have already pushed bears into the Tenakee area in higher concentrations than would be experienced without those cuts. Therefore, an intact Indian River seems all the more important.

M&MK-3

Crab Bay is a favorite duck and deer hunting spot for us. Logging there would obviously do nothing to improve our ability to pursue this type of recreation and we seriously question whether or not the steep slopes of the surrounding mountains lend themselves to responsible logging. The stream at the head of the bay would almost certainly undergo increased levels of silt as a result of erosion and the anadromous fish in it would be jeopardized.

M&MK-4

Tenakee is something of a sanctuary to those of us seeking to escape an ever-growing Juneau. Aside from the excellent fishing and hunting opportunities available there, it is a place that is desirable simply for it's wild character. Logging the Inlet will ruin this character and the ability of the town to draw visitors. It will also negatively impact the subsistence lifestyles of a great many of our friends there.

M&MK-5

We urge you to rethink these proposed cuts and protect an area and community that are truly worthy of such consideration.

M&MK-6

Sincerely,

Mark & Michelle Kaelke

Mark and Michelle Kaelke

FS Response

M&MK-1 A copy of your letter has been given to the Finger Mountain Interdisciplinary Team.

M&MK-2 Timber harvest activities will occur three to six miles from the City of Tenakee Springs. None of the timber harvest units will be visible from Tenakee Inlet. The only visual sign that timber management activities are occurring will be around the LTF site.

M&MK-3 Refer to Response ADF&G-9 and the Alternative Maps. There will be no "virtually connect(ing) swaths of clearcuts from the Hoonah area" to Tenakee Springs.

Impacts to Sitka black-tailed deer and brown bear habitat are displayed in the Wildlife and Subsistence sections in Chapter 4 in this EIS. Human activity around brown bears very often results in the bears moving away (unless there is garbage in the area). When human activity ends or is reduced, the bears move back.

The Indian River drainage is far from "intact." Value Comparison Unit (VCU) 2200 has produced timber for many years. On National Forest System land there are currently 11.8 miles of road, three rock quarries, and 824 acres of regenerated timber harvest units.

M&MK-4 Crab Bay is located in the Finger Mountain Timber Sale Project Area. The Finger Mountain Timber Sale was considered in the cumulative effects analysis for resources in Chapter 4. Your project specific concerns (i.e., recreation use, steep slopes, stream silting) will be considered in the project specific Finger Mountain Timber Sale EIS.

M&MK-5 Refer to the modified 1997 Forest Plan map for development (basically the green, dark brown, and yellow areas) and non-development (basically the tan and pink areas) land use designations in the Tenakee Inlet area.

M&MK-6 Comment noted.

PX 211
Tombler Sprg AL 99854
January 19, 1998

Captain
Ly Reginald Forester
9 Forest Service

8x21628
cws AL 99802-1623

Mr. Kaplan

have heard that you are interested in implementing
the concept of "collaborative stewardship" in the
19000. Perhaps the attached letter will give you
idea at the Forestation we have encountered trying
"collaborate" with the Chatham Area.

Sincerely,

Wally Kemp

RECEIVED

JAN 23 1998

FS Response

MK&NO-1 Refer to Response TCP-1 and ADF&G-6.

Nick Olmsted/Molly Kemp
Box 571
Tenakee Springs AK 99841

January 11, 1998

Gary Morrison
Chatham Area Supervisor
USDA Forest Service
204 Siginaka Way
Sitka AK 99835

Dear Mr. Morrison,

While reviewing the Draft Environmental Impact Statement for the proposed Indian River Timber Sale(s) we were shocked to find that a cave that was nominated and approved for "significant" status under the Federal Cave Resources Protection Act three years ago still has not been officially designated as such. The cave in question, "Reflection Cave", was described and nominated by the Ketchikan Area Geologist in 1994, and that nomination was approved by the Forest Service significance panel at that time.

Upon checking further we learned that NONE of the caves nominated and approved in 1994 have passed the paperwork obstacle of the Chatham Area. We were deeply chagrined by this discovery, having invested a considerable amount of time and effort writing descriptions of outstanding caves in the area, meeting the strict deadline for nominations imposed by the significance assessment panel, and working with Forest Service personnel to ensure the confidentiality of the information we volunteered. After we heard that the significance panel had approved all the Chatham area nominations we assumed that for once our efforts to cooperate with the Forest Service had borne fruit. Evidently we were wrong in that assumption.

We request that you complete the necessary paperwork to formalize Significant Cave Status for all the Chatham Area caves nominated and approved in 1994, and provide written notification that the process has been completed.

Sincerely,

Nick Olmsted
Nick Olmsted

Molly Kemp

Molly Kemp

MK&NO-1



Indian River Timber Sale(s)
Information Request and Comments:

Linn Shipley, Team Leader
Indian River Planning Team
Tongass National Forest, Chatham Area
204 Signaka Way, Sitka, AK 99835
(907) 747-6671 Fax: (907) 747-4331
e-mail: /s=indianriver/ou1=r1003a@mhs-fswa.atmail.com



If you want to be included on the mailing list for further information about this project, and/or to request a copy of the Indian River Draft Environmental Impact Statement (EIS), complete this form and mail it to us at the address below. Please print clearly:

Name: MARILYN T. TAYLOR
Address: P.O. BOX 513
City/State/Zip: TENAKEE SPRINGS, AK 99841

Check: ☐ I would like to receive the complete EIS. ☒ Please send me the Summary only.
☐ I would like to receive this information in electronic or CD ROM format, if available.

Invitation to Comment: We welcome your thoughts regarding this project. We encourage you to review the environmental impact statement and comment on the document. Your ideas are critical to help us identify significant issues and to guide us in developing a final document. You may provide your comments to us in a variety of formats, but we encourage written comments so that your thoughts are accurately documented. You can use the form on the back of this page and return it by mail, or call, fax or e-mail to the Indian River Planning Team.

From: MARILYN T. TAYLOR
P.O. BOX 513
TENAKEE SPRINGS, AK
99841



TO:
Indian River Planning Team
Tongass National Forest, Chatham Area
204 Signaka Way
Sitka, AK 99835



CHATHAM AREA
SUPERVISORS OFFICE

To Mail: Fold and fasten with staple or tape.

Indian River Timber Sale(s) Project

Comments (Please print clearly. If you need additional space, please attach extra pages.):

WHY DO THIS LOGGING AT ALL SINCE THE FOREST SERVICE WILL NOT MAKE ANY PROFIT FROM IT? YOU EVEN ADMIT IT WILL COST MORE TO CARRY OUT THE OPERATION THAN YOU WILL GAIN FROM THE SALE OF THE LUMBER! YOU EVEN ADMIT YOU WILL HAVE TO LOOK AROUND FOR A BUYER!

ANYBODY CAN SEE ALL THE DISTURBANCE TO THE DELICATE BALANCE OF THE FORESTS WILL CAUSE IMMENSE, IRREPARABLE DAMAGE TO NOT ONLY THE FORESTS BUT ALSO TO ALL THE WILDLIFE THAT LIVES WITHIN. BESIDES DESTROYING THIS UNPARALLELED NATURAL LEGACY FOR AT LEAST GENERATIONS TO COME, YOU WILL GRADUALLY END OUR MOSTLY SUBSISTANCE WAY OF LIFE, THUS FORCING THOUSANDS OF ~~LOCAL~~ RESIDENTS TO THE CITIES AND SUBURBS TO TRY TO FIND WORK. TO SCHOOL THIS MANY PEOPLE TO LIVE IN A MODERN, HIGH-TECH, HIGH-STRESS SOCIETY WILL BE LENGTHY AND MANY WILL GO ON WELFARE, TO THE STREETS, COSTLY, MANY, LIKE SO MANY SMALL DISPLACED FARMERS, WILL NOT SURVIVE. THIS LOGGING YOU WANT TO DO DOES NOT MAKE ANY SENSE AT ALL!

Note: Comments received in response to this solicitation, including names and addresses of those who comment, will be considered part of the public record on this proposed action and will be available for public inspection. Comments submitted anonymously will be accepted and considered; however, those who submit anonymous comments will not have standing to appeal the subsequent decision under 36 CFR Parts 215 or 217. Additionally, pursuant to 7 CFR 1.27(d), any person may request the agency to withhold a submission from the public record by showing how the Freedom of Information Act (FOIA) permits such confidentiality. Persons requesting such confidentiality should be aware that, under the FOIA, confidentiality may be granted in only very limited circumstances, such as to protect trade secrets. The Forest Service will inform the requester of the agency's decision regarding the request for confidentiality, and where the request is denied, the agency will return the submission and notify the requester that the comments may be submitted with or without name and address, within ten (10) days.

MTT-1

MTT-2

MTT-3

FS Response

MTT-1 Refer to Response TK-3.

MTT-2 Refer to Chapter 4 in this EIS for environmental consequences of implementing any of the alternatives.

MTT-3 Comment noted.

NAME: MARILYN T. TAYLOR PHONE: (907) 736-2334
ADDRESS: P.O. BOX 513, TENAKEE SPRINGS, AK 99841
IMPROVING THE INDIAN RIVER TIMBER SALE(S) PROJECT

Help us identify improvements for the Indian River Timber Sale(s) project. An improvement may be an action (such as rearranging the mix of harvest units and harvest methods to improve economics), a mitigation measure (such as motorized vehicle road closures to reduce soil erosion), or a construction project (such as a recreation cabin or cross-country ski/hiking trail).

1. How could the Indian River Timber Sale(s) project be improved? Describe the improvement(s); please be as specific as possible.
WHY DO IT AT ALL, SINCE IT WILL BE A LOSS TO TAXPAYERS ANYWAYS AND WILL ONLY HURT THE ENVIRONMENT. IF YOU DO THIS, THOUGH, CLOSING ANY ROADS WOULD HELP. WHY IS THIS IMPROVEMENT DESIRABLE?
TENAKEE WOULD NOT BECOME A THROUGHFARE FOR ATVS TO AND FROM HOONAH.

3. How feasible is this improvement? Please be as specific as possible.
VERY FEASIBLE. JUST BULLDOZE THE ROADS SHUT AND GET RID OF YOUR BRIDGES.

4. What obstacles are standing in the way of making this improvement?
NONE

CHATHAM AREA
SUPERVISORS OFFICE

5. What other people, areas, issues, or viewpoints must be considered if your improvement is implemented?
CLOSING THE ROADS WOULD HELP KEEP OUR AREA ISOLATED AND SERENE AS POSSIBLE, EXCEPT FOR YOUR LOGGED-OFF AND/OR SELECTED LOGGING AREAS.

FS Response

MTT2-1 Refer to Response TK-3.

MTT2-2 Road Management Objectives (RMOs) are displayed in Appendix D. The Record of Decision for this Final EIS will detail the RMOs selected by the responsible official.

MTT2-3 Refer to Response ADF&G-9.

MTT2-4 Comment noted.

MTT2-5 Comment noted.

MTT2-6 Comment noted.

MTT2-1

MTT2-2

MTT2-3

MTT2-4

MTT2-5

MTT2-6



ALASKA STATE OFFICE
308 G Street, Suite 217
Anchorage, AK 99501
Tel: (907) 276-7034
Fax: (907) 276-5069

January 20, 1998

Lynna Shipley, Team Leader
USDA Forest Service
Tongass National Forest
204 Signaka Way
Sitka, AK 99835
FAX: 907-747-4331

Dear Mr. Shipley:

I am writing to express the concern of the Alaska office of the National Audubon Society over the Indian River Timber Sale Draft EIS. The National Audubon Society is a conservation organization with over 500 chapters and a membership of over 550,000. Audubon has four chapters in Alaska with a membership of over 2,200. The mission of the National Audubon Society is to conserve and restore natural ecosystems, focusing on birds, other wildlife, and their habitats for the benefit of humanity and the earth's biological diversity. Audubon has long been interested in conservation issues on the Tongass Forest and was a strong supporter of the Tongass Timber Reform Act of 1990. We have also closely monitored the Tongass Land Management Plan Revision. Numerous Audubon members have visited or plan to visit the Tongass National Forest and many Alaska Audubon members recreate and/or harvest food on the forest.

The sale area has had considerable timber harvest and has an extensive road system. We are particularly concerned about the potential link between the Hoonah road system and the road system within Indian River that basically would connect the communities of Tenakee Springs and Hoonah. The distance between these two road systems would be less than one mile. Once these areas are connected, there will be increased traffic on the road. This will further impact brown bears on northeastern Chichagof Island. Of course the increased loss of habitat will cumulatively impact deer, bear, and marten.

It is my understanding that planning for this timber sale did substantively not involve either the Alaska Department of Fish and Game or the forest Ecosystem that has been working on ecosystem management for the northern Tongass for a number of years. This sale does not provide any long-term strategy for the conservation of brown bears. The plan does not clearly identify or map 500 foot buffers on important fish streams used by brown bear. To my knowledge the Department of Fish and Game has not signed off on the stream buffers or participated in developing a comprehensive brown bear conservation strategy even though the department has collected much research data from this area.

Was this DEIS completed under the revised TLMP? In 1996 and 1997, the Forest Service convened a panel of four brown bear experts to assess the likelihood that TLMP Revision alternatives would result in habitat sufficient to support viable and well distributed brown bear populations across their historic range on the Tongass National Forest. Increased miles of roads had a strong negative impact on conservation of bears populations. More roads equated to

FS Response

NAS-1 Refer to ADF&G-9.

NAS-2 Refer to the Wildlife and Subsistence sections in Chapter 4 for environmental consequences to brown bear, deer, and marten.

NAS-3 ADF&G and ECOTeam input was considered in the planning process. Refer to the Collaborative Stewardship portion in the Public Involvement section in Chapter 1 for ADF&G involvement. Interactions with ADF&G were critical to obtaining State concurrence with the Alaska Coastal Management Plan requirement. ECOTeam input was critical to the design and shape of the timber harvest units, especially in regard to windfirm boundaries and unit location.

NAS-4 The 1997 TLRMP Final EIS and modified 1997 Forest Plan provide a long-term habitat conservation strategy for brown bears. It would be the ADF&G's responsibility to develop any long-term population conservation strategies for brown bears.

The unit cards have been modified, where necessary, to include a wildlife biologist to lay-out brown bear buffers.

The ADF&G has not "signed off" on stream buffers because they have no authority to do so. The ADF&G has reviewed, and will continue to review, activities in and near fish streams as part of the recently approved Title 16 Memorandum of Agreement.

Whether or not the ADF&G participated in developing a comprehensive brown bear habitat conservation strategy is outside the scope of this EIS. This is a subject better dealt with at the Forest Plan level.

NAS-5
(cont.)

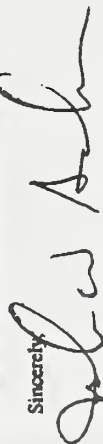
increased mortality and gaps in the distribution of bear populations. This has been clearly demonstrated by the Alaska Department of Fish and Game with data collected from northeastern Chichagof Island. The panel stressed the importance of roadless reserves for brown bear conservation. Riparian buffers were also identified by the experts as important for sustaining salmon production (bear food) and also important for maintaining critical brown bear foraging and security habitat. The panel considered 500 ft a minimum buffer that should be applied to all brown bear feeding areas.

NAS-6

In summary, I believe this DEIS has serious deficiencies and must be corrected. The Indian River Timber Sale as defined in this DEIS will continue the incremental loss of wildlife habitat on northeastern Chichagof Island. Audubon strongly suggests that you address the concerns we have raised in this letter.

Thank you for the opportunity to comment.

Sincerely,



John W. Schoen, Ph.D.
Executive Director

FS Response

NAS-5 Yes.

Refer to Response PT-3. There are additional non-development land use designations on Northeast Chichagof Island and throughout the Tongass National Forest that contribute to the long-term habitat conservation strategy. In addition, the ADF&G and the Federal Subsistence Board have prohibited the use of motorized vehicles when hunting brown bears, and have eliminated the fall brown bear hunt. All of these measures were designed to ensure the long-term viability of brown bear populations.

See modified 1997 Forest Plan, page 4-114 for the standard and guideline regarding forested buffers of approximately 500 feet from important bear foraging sites.

NAS-6 Comment noted.

Forest Supervisor
Tongass National Forest
USDA Forest Service
Attn: Indian River DEIS
204 Siginaka Way
Sitka, AK 99835

19 January 1998

Dear Forest Supervisor:

I seldom use the Tenakee Springs Area directly but I have strong feelings about the extent and kinds of logging described in the Draft Environmental Statement for the Indian River Timber Sale.

None of the proposed alternatives protect wildlife used by sport and subsistence hunters--when hunters can not fill their needs in the Tenakee Area they readily move into the areas used by people in Sitka. All of the alternatives propose too much clearcutting with permanent loss of wildlife and fisheries habitat. The extensive clearcutting will impair the low summer flows in habitat critical to the survival of salmon in freshwater.

NIC-1

The building of permanent roads should be discontinued. Roads pose the greatest threats to fish and wildlife, both directly and indirectly. The proposed roads will serve to establish vehicle traffic between Tenakee and Hoonah--clearly against the wishes of residents of the area.

NIC-2

The economic needs of the people of Tenakee must have top priority--what happened to co-operative stewardship? Who in Tenakee needs more logging in the area?

NIC-3

The issues are clear--road building and clearcutting of oldgrowth forests on the Tongass must stop. This DEIS should be withdrawn and the project completely redesigned to comply with the wishes of the people of Tenakee and other small communities of southeast.

NIC-4

Sincerely,



Natasha I. Calvin
PO Box 2966
Sitka, AK 99835

FS Response

NIC-1 Refer to Responses RJE-1 and RJE-2.

Refer to the Stream Temperature and Stream Flow parts in the Soils and Water Quality portions, and the Fish and Fish Habitat portion in the Soils, Water, and Fish section in Chapter 4.

NIC-2 Refer to Responses RJE-3 and RJE-4.

NIC-3 Refer to the Economics and Social Values section, Community Effects - Tenakee Springs portion in Chapter 4. Regarding collaborative stewardship, refer to Response ADF&G-6.

NIC-4 Comment noted.

FS Response

Neil MacKinnon
1114 Glacier Ave.
Juneau, Alaska 99801

Forest Supervisor
Tongass National Forest, Chatham Area
204 Signaka Way
Sitka, AK 99835

January 7, 1997

Re: Indian River Timber Sale

Please record my comment in support of the Indian River Timber Sale alternative C. However, since it seems that Tenakee Springs does not want any activity in the immediate vicinity of their village the Forest Service should consider connecting the Indian River sale area to the Hoonah road system and eliminate any activity near Tenakee. All the required infrastructure exists in Hoonah to service the sale and the town can use the additional economic activity. Tenakee on the other hand has little or no infrastructure to support a sale and a bias against any change in their insular lifestyle.

NMK-1

Additionally, I have prospected extensively in the area on the Hoonah road system. We have found indications of mineralization in some of the rocks that trend through the Indian River area. Easier access from the Hoonah side would be very beneficial to our efforts in searching for and economic mineral deposit. Hoonah has the infrastructure to support our prospecting efforts while Tenakee offers us nothing except a warm bath.

NMK-2

Sincerely yours,


E. Neil MacKinnon

NMK-1 - Refer to the Alternatives Eliminated from Detailed Study section in Chapter 2.

NMK-2 Mineral exploration and development proposals should be directed to the District Ranger, Hoonah Ranger District, P.O. Box 135, Hoonah, AK 99829.



UNITED STATES DEPARTMENT OF COMMERCE
Office of the Under Secretary for
Oceans and Atmosphere
Washington, D.C. 20230

December 23, 1997

Forest Supervisor
Tongass Nat'l Forest, Chatham Area
ATTN: Indian River EIS
204 Siginaka Way
Sitka, AK 99835

To Whom it may Concern:

Enclosed are comments on the Draft Environmental Impact Statement for Indian River Timber Sales Alaska Region Sitka, Alaska. We our comments will assist you. Thank you for giving us an opportunity to review this document.

Sincerely,

Susan B. Fruchter

Susan B. Fruchter
Acting NEPA Coordinator

Enclosure

FS Response

NOAA-1 The National Geodetic Survey's home page was accessed, Project Area geodetic control monument information obtained (see Planning Record), and a determination that none of the monuments will be disturbed or destroyed by Project activities was made.

NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION (NOAA)

COMMENTS ON

DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)

FOR

INDIAN RIVER TIMBER SALES ALASKA REGION, ALASKA

National Oceanic and Atmospheric Administration (NOAA) and the National Geodetic Survey's (NGS) have reviewed the subject DEIS and have the following comment provided below.

All available geodetic control information about horizontal and vertical geodetic control monuments in the subject area is contained on the NGS home page at the following Internet World Wide Web address: <http://www.ngs.noaa.gov>. After entering the NGS home page, please access the topic "Products and Services" and then access the menu item "Data Sheet." This menu item will allow you to directly access geodetic control monument information from the NGS data base for the subject area project. This information should be reviewed for identifying the location and designation of any geodetic control monuments that may be affected by the proposed project.

If there are any planned activities which will disturb or destroy these monuments, NGS requires not less than 90 days' notification in advance of such activities in order to plan for their relocation. NGS recommends that funding for this project includes the cost of any relocation(s) required.

NOAA-1

FS Response

PC-1 Refer to the How the Indian River Project Area was Selected section in Chapter 1.

PC-2 Refer to the appropriate resource sections in Chapter 4 for additional information regarding impacts to these resources.

PC-3 Refer to the Purpose and Need section in Chapter 1; over 72 percent of the Project Area is in the modified 1997 Forest Plan Timber Production land use designation.

PC-4 Refer to the Indian River Timber Sale(s) Project Environmental Impact Statement, Volumes I and II, and the Record of Decision for the Indian River Timber Sale(s) Project Environmental Impact Statement.

PC-5 The State of Alaska and Forest Service issue beach salvage log special use permits to clean up logs off the beaches.

1-19-98

Ann Sholey-Trombador
USDA Forest Service
SITKA

Re: Indian River Timber Sale

Date SIR:

I think you should look somewhere else for the timber you want to cut. Tenakee Springs would be devastated with your proposed cutting. It would totally ruin the area, change the wind pattern, cause mud slides, run off the game they use for subsistence.

We go to Tenakee Springs every summer and love the area. With all the other places that are not inhabited why log a place people depend on being in the natural state.

You require (the government) the logging of the U.S. to fill out an impact study before a road or other things are built but you are allowed to do this kind of summertime without a case for anyone else. Why don't you clear all the logs off the beaches. There are millions of board feet of

lumber just going to waste.

Sincerely
Pat Crutcher P.O. Box 21746
Juneau AK 99802

1-18-98

Lynn Shipley, Team Leader,
USDA Forest Service

I am very concerned about the Indian River timber sale. I own a house and a business in Tenakee Springs, and the town and the inlet are very dear to my heart. I see no need for further clearcutting in the Tenakee area and from what I read and hear from the Forest Service, it will actually cost the taxpayer money for you to log this area. I subsistence hunt, fish, crab, shrimp, and clam dig in the Tenakee Inlet and this is going to have a negative impact on these activities. From your own research, the deer habitat is going to be negatively affected, resulting in fewer deer for subsistence hunters. Tenakee Inlet has been so heavily clearcut in the past, it's time to give what forest there is left, a rest. The Forest Service seems to have some philosophical problem with just letting old-growth remain intact.

Something that really bothers me is the increased road building in the area. Tenakee Springs is one of the few places left that a car is not a necessity. I don't want to see 4 wheelers and trucks coming over from Hoonah, and that is inevitable if you extend the road from Game Creek closer to the Indian River Road. The Section 106 prohibits this, but, as I understand it, it is in the latest logging plans. Also, some of the alternatives show 2 log transfer sites, and that was not supposed to be the case. The agreement was for Sunny Cove only. You really need to come up with some new alternative plans that call for selective cutting, in much smaller amounts. The alternatives that you gave us, to me, are like asking whether you would rather be shot by a 44 or a 12 gauge! Lets come up with something reasonable.

Combine the Indian River Sale with the Finger Mountain Sale, and more roads, especially closer to Hoonah, and you really are "screwing" the Tenakee area. I get really angry when you, time after time, come up with more plans that continually degrade the Tenakee area, further reducing deer populations, fishing and crabbing and subsistence, not to mention the scenic and wilderness and recreation values of the area. Wake up and listen to the people! Thank You

Sincerely,

Pat Taylor
Pat Taylor

PO Box 641
Tenakee Spgs, Ak 99841

FS Response

PT-1 Refer to Response TK-3.

PT-2 Comment noted.

PT-3 Refer to the Purpose and Need section in Chapter 1; over 27 percent of the Project Area is in the modified 1997 Forest Plan Old-growth Habitat land use designation. This designation did not exist under the 1979 TLMF.

PT-4 Refer to Response ADF&G-9.

PT-5 Refer to Response ES-4.

PT-6 Refer to SEACC-8 and to the Other Issues section, Small Timber Sales portion in Chapter 1.

PT-7 Comment noted.

PT-1

PT-2

PT-3

PT-4

PT-5

PT-6

PT-7

ROBERT A. FEIGES
P.O. Box 61
Tenacoe Springs, Alaska

JANUARY 13, 1998

MR. GARY MORRISON, Forest Supervisor
Chatham Area - Tongass National Forest
204 SIELENKA Way
Sitka, Alaska 99835

Dear Supervisor Morrison:

Thank you for the opportunity
to offer this statement for the Record
Regarding the Indian River Sale proposal.

The scheme illustrates the old
fate that no matter how much things
change, they remain the same. It
reminds me of something at a meeting
with the Forest Service, here at
the Shamrock some years ago: the
problem is - that the Forest Managers
can't see the Forest for the trees.

Your proposal confirms that is
still the problem.

Two

The Summary concludes, under Purpose and Need, that "Harvesting aging stands, including those in declining health, on lands that allow timber harvest, and replacing them with faster growing, healthy stands will reduce volume loss associated with decay and disease, and increase the growth and yield of the managed forest land."

And yet, immediately preceeding, one is told that "disease and decay processes are a natural part of ~~the~~ forest ecosystems, and play a key roll in providing wildlife habitat in old growth forests."

It appears from your conclusion that increased production wins out over wildlife habitat. It is obvious to me that 'getting out the cut - no matter the cost' is still priority-one at 204 Signature Way. I suggest such single purpose preference is more appropriate to managing a tree farm, not a National Forest.

RAP-1

FS Response

RAP-1 Refer to Response ZS-1. Also, refer to the entire Purpose and Need section in Chapter 1, not just one or two portions of the section, for a better understanding of what the project is about.

THREE

Your RESUME upon computer models and Demand scenarios is faulted. It certainly failed the test when the market left your recent offering waiting at the altar, despite the entitlement of the usual road credit doury.

Plainly, market demand and tree farming do not justify either a purpose or need for this project.

It is clear that the action alternatives, while elaxed in differing techniques and locales, are all based on large scale logging. None provide sustained availability of timber for local, small scale value-added manufacturing.

It is no less clear that all the action alternatives will nicely have adverse effects on the local economy. The summary itself indicates so in its 'economics' discussion, relating to local tourism related businesses.

FS Response

RAP-2 We assume that you are referring to the Waterworld Timber Sale; no bids were received for this timber sale in November 1997. There were no purchaser road credits associated with this timber sale because there were no roads constructed; all of the logs would have been yarded directly to salt water using helicopters. Forest Service contracts no longer include purchaser credits.

Computer models and demand scenarios are some of the tools used in timber sale planning. While we strive to obtain the best available information to make the best timber sale package possible, there are no guarantees, especially in the highly volatile markets we are currently experiencing. Timber volume from the Waterworld sale area will be available for sale at some other time when the markets have improved.

RAP-3 Refer to Response SEACC-8 and to the Other Issues section, Small Timber Sales portion in Chapter 1.

RAP-4 Refer to the Recreation Commercial Uses portion in the Recreation section in Chapter 4 for additional information.

RAP-2

RAP-3

RAP-4

Four

RAP-4
(cont.)

It fails entirely to address the visitor trade generated by private and commercial boats and yachts, which, by any measure, dwarfs the locally owned operators, and contributes mightily to the local economy. This is a serious omission, which speaks directly to the reliance on computer models such as IMPLAN.

Other computer models, and their Forest Service devotees, assure us (Social Values) "that no reduction in spot deer bag limit or season is expected as a result of this project." Yet ~~ONE~~ ^{ONE} earlier learned (subsistence) "considering cumulative effects, it is projected that there is a significant possibility in all alternatives (including the no action alternative) of a significant restriction for subsistence use of deer." In the short term weather is blamed, in the long term more people seeking less deer. Perhaps because of less habitat? The report fails to answer the question.

RAP-5

And it fails to include the

RAP-6

FS Response

RAP-5 Refer to the Wildlife and Subsistence sections in Chapter 4 for additional information.

FS Response

RAP-6 Refer to Response SEACC-20.

RAP-7 Refer to the Wildlife and Subsistence sections in Chapter 4 for impacts to habitat.

FIVE

cumulative effects on the deer population as a result of the pending Finger Mountain sale. Yet both sales will jointly determine the availability of deer for subsistence and sports hunters in Tenakee Inlet.

RAP-6
(cont.)

HABITAT, AND ITS LOSS - PAST, present and future - is what matters most. Deplorably, this simple, fundamental fact is left out of the equation.

RAP-7

It's a unique kind of math that moves backward, propped up from the desired bottom line, by dubious computer models. But, how else can you have it both ways? The Forest Service tries, but it just doesn't add-up.

Mainly, it doesn't work because the Forest Service failed to incorporate step-one for the implementation of the Revised Tongass Plan -

RAP-8

FS Response

RAP-8 Refer to Responses ADF&G-6, ES-4, and SEACC-16.

RAP-9 Refer to Responses ADF&G-6 and SEACC-8.

Six

collaborative Stewardship with the local community.

Was there collaboration in the development of the M.O.U. for the Sunny Cove log dump? Assuredly. Is it reflected in the D.E.I.S.? HARDLY AT ALL.

The proposals for additional log dumps at 10 mile and Sunny Top illud-treat how responsive the Forest Service was to our collaborative effort, and how it treats with disdain, not only that effort, but our citizens who voted to affirm the Memorandum of Understanding.

The plans for the various Action Alternatives vary in style, not in substance, constituting an obvious predilection for large scale logging activities, and certainly not the consequence of collaboration.

RAP-8
(cont.)

RAP-9

SEVEN

FS Response

RAP-10 Refer to Responses ADF&G-6 and ADF&G-9.

RAP-11 Comment noted.

ALTHOUGH A STATUTORY PROHIBITION PREVENTS A ROAD LINK TO GANE CREEK, IT HASN'T PREVENTED PLANS FOR BRIDGING THE REMAINING RAVINES; COLLABORATION TO BE LEFT IN THE DUST AS THE ATV'S TROLL BY.

RAP-10

COLLABORATIVE EFFORTS TO LESSEN HELICOPTER NOISE BY ESTABLISHING FLIGHT ACCESS CORRIDORS WILL, AND CAN, ONLY WORK IF THE FOREST SERVICE ADHERES TO THE OTHER PROVISIONS OF THE M.D.U., WHICH IT PROPOSES TO DO IN ONLY ONE OF THE ACTION ALTERNATIVES. TO DISMISS THE DAY TO DAY OPERATIONAL NOISE AS "NEGIGIBLE" IS NOT CORRECT. IT WILL BE NOTICEABLE, AND QUITE SO IN THE OFF SHORE DREZZY, ~~day~~ NICE DAYS OF SUMMER.

RAP-11

DISPITE OUR BEST EFFORTS, THE FUTURE OF THE EAST TENNESSEE TRAIL IS MORE UNCERTAIN. NOT ONLY IS IT AN IMPENTANT RECREATIONAL ASSET, IT PROVIDES THE ONLY LAND ACCESS TO 23 HOMES, AND ALMOST AS MANY LOTS, AWAITING DEVELOPMENT.

RAP-12

EIGHT

Recreation aside, the Project plan ignores the necessity of the trail to provide basic transportation link to many home owners. This cannot denote collaboration as any reasonable person would describe it. Yet one Alternative would go so far as to entirely move the trail.

RAP-12
(cont.)

The DEIS is silent as to the extent of any investigation to locate, identify or quantify KARST resources. I suggest the focus of blind eyes is a poor precursor to collaboration.

RAP-13

COLLABORATION IS ABSENT IN AN IMPLAN model that postulates millions in profit, but only thousands for the local economy. The dollars are directed along a one-way-path, out of town.

RAP-14

FS Response

RAP-12 Refer to Response ADF&G-6, the Transportation and Heritage Resources sections in Chapters 3 and 4, and Appendix C for additional information regarding the East Tenakee Trail.

Alternative F would construct 0.15 miles of new road to access a new log transfer site in Sunshine Cove. The road alignment overlaps approximately 200 feet of the East Tenakee Trail, which would require relocating this portion of the trail. Heritage resource mitigation measures would be implemented prior to any relocation.

RAP-13 Refer to Response ADF&G-6 and the Geology, Minerals, and Caves section in Chapter 3 regarding efforts to locate, identify, and quantify karst resources.

RAP-14 Refer to Response ADF&G-6. The IMPLAN model was developed prior to the signing of the Record of Decision for the modified 1997 Forest Plan. Also, IMPLAN generates employment and income numbers; it does not calculate profits or numbers of dollars to the local economy.

NINE

FS Response

RAP-15 Refer to Response ADF&G-6.

One finds it difficult to believe that your Indian River Project Plans reflect what Regional Forester Phil Janik proposed as collaborative stewardship.

His is a laudatory goal. One which deserves a chance. These plans don't give it one. But, with a lot of work, on all our parts, can be achieved.

Sincerely,

Robert A. Peaves

ROBERT A. PEAVES

P.O. Box 61

Tenakee Springs Alaska 99541

RAP-15

FS Response

Forest Supervisor,

Upon reviewing your Draft Environmental Impact Statement concerning the proposed Indian River timber sale I was alarmed to note several potentially harmful possibilities as well as areas of previous agreement that were ignored and changed without the knowledge of people in Tenakee Springs.

To be specific, this statement still does NOT demonstrate any adequate purpose or need for the project. Even worse, it does not acknowledge the Memorandum of Understanding voted on by Tenakee residents in which the Forest Service agreed that if the Sunny Cove Site was used there would be no log dump at Ten Mile Creek. Some of your alternatives show both sites being used--- a severe disaster for our inlet. This breach of trust is destructive to our communication as well as our ecology.

Also, the long term cumulative effect of past, present and foreseeable future sales is not adequately explored, neither are the cumulative impacts of simultaneous sales, such as the "Finger Mountain" sale. It is quite obvious that all action 'alternatives' are based on large scale logging and not on a genuine range of real alternatives.

Other inadequacies of the DEIS include a lack of honest attention to current and long term impact on subsistence, especially deer, the loss of all wildlife habitat, helicopter noise, loss of local income from guided recreation, proposed logging on 'high vulnerability' karst terrain. There has been no provision to ensure sustained availability of high quality timber for local small scale manufacturing.

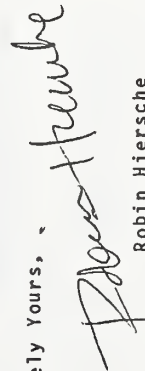
If all this weren't bad enough, the proposed road construction would bring the Indian River Road approximately 3/4 mile from the Game Creek Road, bridging all ravines that currently prevent or inhibit ATV access. This is totally unacceptable to our community.

Probably most disgusting of all is the complete lack of spiritual awareness: knowing and honoring this land as it inspires and provides for its artists, craftspersons, poets, and shamans.

To top of all these abominations, the proposed timber sales are 'below cost'---will actually cost every taxpayer to cut these trees.

Reconsider this plan immediately and make appropriate changes with the guidance and consent found in honest communication with the people of Tenakee Springs who will have to live with this action for the rest of their lives and for generation to come.

Sincerely Yours,



Robin Hiersche
Box 22

RH-1 Comment noted.

RH-2 Refer to Responses ES-4 through ES-8, Response ES-10, and Response SEACC-16.

RH-3 Refer to Response SEACC-20.

RH-4 Refer to Response SEACC-8.

RH-5 Refer to the Subsistence section, Wildlife section (including the Helicopters portion for impacts on wildlife species), and Recreation section (including the Visuals and Noise portion for impacts of helicopters on people).

Refer to Response TCP-3.

Refer to the Other Issues section, Small Timber Sales portion of Chapter 1 of this project specific EIS.

RH-6 Refer to Response ADF&G-9.

RH-7 Comment noted.

RH-8 Refer to Response TK-3.

RH-9 Comment noted.

RH-1

RH-2

RH-3

RH-4

RH-5

RH-6

RH-7

RH-8

RH-9

FS Response

ATT: LYNN SHIPLEY TEAM LEADER:

USDA FOREST SERVICE
TONGASS NATIONAL FOREST, CHATHAM AREA

204 SIGINAKA WAY
SITKA; AK 99835 FAX 907 747 4331

Re Indian River Timber Sale

DEAR SIR:

MY WIFE & MYSELF LIVE IN JUNEAU
AND BOAT ALL OVER SOUTH EAST EXERING
THE TENAKEE SPRINGS AREA & WE
OBJECT TO LARGE SCALE LOGGING IN THE
TONGASS FOREST JUST TO SATISFY THE
LOGGING INTERESTS. THIS WOULD RUIN
THE FOREST. WHAT HAPPENED TO CLEAR
SELECTIVE LOGGING AS APPOSED TO
CUT.

I ESPECIALLY OBJECT TO ANY LOGGING
IN THE TENAKEE SPRINGS AREA.

SINCERELY
Robert H Crabtree
ROBERT H. CRABTREE AK
Box 021746 JUNEAU
REGISTERED VOTER!

RHC-1 Comment noted.

RHC-2 Refer to Chapter 2 for descriptions about selective
(uneven-age) harvest and clearcut with retention (even-age)
harvest methods for this project.

RHC-3 Comment noted.

RHC-1

RHC-2

RHC-3

Lynn Shipley, Team Leader
USDA Forest Service
Chatham Area
204 Siginaka Way
Sitka, AK 99835

18 January 1998

Forest Service:

Although I seldom use the Tenakee Springs Area directly I have strong feelings about the extent and kinds of logging described in the Draft Environmental Statement on the Indian River Timber Sale.

- RJE-1** The alternatives do not protect wildlife used by sport and subsistence hunters--when hunters can not fill their needs in the Tenakee Area they readily move into the areas used by people in Sitka. All of the alternatives propose too much clearcutting with permanent loss of wildlife and fisheries habitat.
- RJE-2**
- RJE-3** The building of permanent roads should be discontinued. Roads pose the greatest threats to fish and wildlife, both directly and indirectly. The proposed roads will serve to establish vehicle traffic between Tenakee and Hoonah--clearly against the wishes of residents of the area.
- RJE-4**
- RJE-5** The economic needs of the people of Tenakee must be top priority--what happened to co-operative stewardship? Who in Tenakee needs more logging in the area?
- RJE-6** The issues are clear--I want no more road building and no more clearcutting of oldgrowth forests on the Tongass. This DEIS should be withdrawn and the project completely redesigned.

Sincerely,



Robert J. Ellis
PO Box 2966
Sitka, AK 99835

FS Response

RJE-1 Timber sale project alternatives are not designed to "protect" wildlife for sport and subsistence hunters. Alternatives address the issues raised during the scoping process. The existing condition of resources within the Project Area that may be affected by the timber sale alternatives is documented in Chapter 3. Environmental consequences as a result of implementing the alternatives are described in Chapter 4. Mitigation measures to reduce or eliminate adverse effects common to all alternatives, including wildlife and fisheries habitat is summarized in Appendix C.

RJE-2 Refer to the Wildlife and Fisheries sections in Chapter 4 for effects to these habitats.

RJE-3 Refer to the Transportation System section for miles of road to be constructed and reconstructed, and Wildlife and Fisheries sections in Chapter 4 for effects to these habitats.

RJE-4 Refer to Response ADF&G-9.

RJE-5 Refer to the Economics and Social Values section, Community Effects - Tenakee Springs portion in Chapter 4. Regarding collaborative stewardship, refer to Response ADF&G-6.

Refer to the Purpose and Need section in Chapter 1 for more information regarding need and market demand.

RJE-6 Comment noted.

FS Response

RPG-1 The Tongass National Forest is managed on a multiple-use, sustained yield basis.

RPG-2 Comment noted.

Wynn Simpson, Lamtadale,
USDA Forest Service,

Tongass National Forest, Chatham Area
204 Sigurdson Way
Sitka, AK 99835

Jan 13, 1998

Dear Mr. Simpson,

My 4 old parents and I have been going to Tongass Springs for a long time hunting deer.

Our Tongass is one of the few remaining forests on this earth. Europe, Asia and now South America are experiencing the loss of their forests.

The loss to the economy will be greatly enhanced by preserving our forests (the Tongass), fish and wildlife for recreation, tourism and observation.

I am in ~~the~~ favor of cutting only dead or dying trees and to do so selectively and with reason. Your proposed Indian River Timber sale does not appear reasonable ^{to me} ~~to me~~ ^{both by relieving healthy timber and in using} ~~Robert P. Gregorich~~ ^{this number tracks}

ROBERT P. GREGORICH, JR
202 TROY AVE
JUNEAU, AK 99801

RPG-1

RPG-2

January 15, 1998

Lynn Shipley, Team Leader
USDA Forest Service
Tongass National Forest, Chatham Area
204 Signaka Way
Sitka, AK 99835

To Whom It May Concern:

I am a resident and property owner in Tenakee Inlet. We own a 5 acre homestead approximately three miles up the Inlet from the town of Tenakee Springs. These comments are in response to the proposed Indian River timber sale and the Finger Mountain timber proposed in Crab Bay across the Inlet:

RS-1

RS-2

RS-3

RS-4

1. Recently the Juneau Empire had an article regarding the amount of federal subsidies expended each year for road building to access timber in our national forests. This is a poor use of taxpayer dollars and I object to that practice. Much of the area around the Inlet is already scarred with roads and clearcuts from prior years. It's time to let these areas recover from prior logging activities, both from an aesthetic and visual point of view.

2. Given the geography of the area, any activity adjacent to Tenakee Inlet can't help but directly effect the existing water quality and extremely productive nature of the area. I've spent alot of time in areas through Southeast Alaska, and have yet to find an area as uniquely productive as Tenakee Inlet for salmon, crab, shrimp, scallops, sea cucumbers, seabirds, ducks, geese, whales, seals, otters and sea lions. Salmon, crab, shrimp and sea cucumbers are all harvested commercially. We use salmon, crab, shrimp scallops, ducks, geese and deer for recreation as well as subsistence use. So do a large number of other seasonal and year round residents of Tenakee, Juneau and Sitka. For example, throughout this past year my family took several dozen salmon, an estimated 40-50 king and dungeness crabs, a dozen scallops, 8 geese, 20-30 ducks and 6 deer - all used for subsistence purposes.

3. It's common knowledge that Tenakee Inlet is one of the most popular and productive areas for sport and subsistence use of deer in the area. A large number of hunters from Juneau annually deer hunt in Tenakee Inlet. They also buy groceries, supplies, gas, rent cabins, while there. This is a significant contribution to the local economy during the winter months when times are lean. Both the short term (i.e. use of heavy equipment, noise, and general disturbance and activity in the area) and long term

FS Response

RS-1 A copy of your letter has been given to the Finger Mountain Timber Sale Project interdisciplinary team.

RS-2 Refer to Response TK-3.

RS-3 Comment noted.

RS-4 Impacts to the local economy are displayed in the Economics and Social Values section and Recreation section in Chapter 4.

RS-4
(cont.)

(visual and environmental degradation of the area) will undoubtedly negatively affect the local economy.

RS-5

4. The most offensive component of both these proposed sales is the construction of additional roads. They cause erosion, they seem to last forever, and they provide access into areas that should remain accessible only by those willing to walk in. Also, road construction associated with the Indian River Sale will further reduce the separation between the communities of Hoonah and Tenakee, something that neither community wants. Since most of us own and use 4 wheelers out there, I can guarantee you that it wouldn't be long before a trail, created by 4 wheelers, would connect the two communities.

RS-6

5. These proposed timber sales would do virtually nothing to benefit our community, yet we would be the recipients of the short term and lasting impacts. This is a very unique area for which the highest and best use should always remain for sport, recreation and subsistence. Plan your timber sales in the Wrangell and Ketchikan areas which will be the destination for some of this timber. Since they would be the beneficiaries, not Tenakee, let them have to deal with the impacts.

RS-7

6. Your analyses should assess the cumulative impacts of proposing two timber sales in the area, in addition to the present and lasting impacts from prior logging activities. While I don't support any logging within the Tenakee Inlet watershed, any timber harvest activity should be very selective and on a small scale that is not visual from any point in the Inlet.

RS-8

7. Given the fact that we have a huge federal deficit and yet we have to subsidize these sales, further contributing to the deficit, and the fact that the mills in Southeast have scaled way back, it's beyond me why you are proposing these sales - particularly in such a productive and unique area which has historically supported important commercial, recreational and subsistence activities.

RS-10

Sincerely,



Rod Swope
Resident of Tenakee Springs

FS Response

RS-5 Road impacts, such as erosion, are discussed in the Soils, Water, and Fish section in Chapter 4.

While roads are designed to last a very long time in order to make them as useful as possible, they do not last forever.

Road Management Objectives (RMOs) are displayed by alternative in Appendix E, including RMOs that close roads to motorized vehicles.

RS-6 Refer to Response ADF&G-9.

RS-7 The City of Tenakee Springs would receive direct benefits in the form of 25 percent fund payments and LTF lease payments as a result of any timber sales from the Project Area.

Refer to Response TK-4. Timber Production goals and objectives are not incompatible with other multiple-uses, such as sport hunting and fishing, recreation activities, and subsistence uses.

Refer to Appendix A; timber sale planning is occurring on other parts of the Tongass NF, including the Wrangell Ranger District. The City of Tenakee Springs also receives 25 percent fund payments as a result of timber sales from these areas.

RS-8 Refer to Response SEACC-20.

RS-9 The alternative harvest methods included even-aged prescriptions (clearcut with retention, overstory removal, and patch cuts) and uneven-aged prescriptions (single tree selection and group selections).

The only timber management activities that would be readily visible from Tenakee Inlet will be around the log transfer facility. None of the timber harvest units will be readily visible from Tenakee Inlet.

RS-10 Refer to Response TK-3. Also refer to the Purpose and Need section in Chapter 1 of this EIS.

RTM-1

Linn:

I am glad you contacted me. I should have left the original, *Comments on the draft Indian River EIS* alone and not requested it be replaced per my January 20 letter. I have FAX the original back to you as of today Jan 25. This FAX is the original but with some additional comments at the end which had appeared in the ill fated replacement version. I hope this will constitute my contribution to the process.

I have sent by mail on January 25 the updated Attachments #1, #2 and #3 to go with the Indian River comments because they are referred to in the document.

I deeply appreciate the Forest Service attention to this matter.

Thank you.

Sincerely,

Richard J. Fritz
Richard Myren
3320 Fritz Cove Road
Juneau, AK 99801
Jan 25, 1998

789-9165

file_india

FS Response

RTM-1 - Supporting documents are located in the planning record.

A Cumulative Effects Analysis of Baseflow Effect

Absent from the DEIS is a cumulative effects analysis of streamflow, specifically of baseflow. Attachments # 1, #2, #3 document an analysis of effects of second growth vegetation on baseflows. The comment on page 40 of the *Indian River Watershed Analysis* (IRWA) that the Myren and Ellis (1984) is speculative is not in accordance with the enclosures. The DEIS offers little adequate support of the determination that the Myren and Ellis paper is speculative. This issue must be faced squarely.

If hydrologists of the Forest Service believe that they can make the "speculative" label stick I would suggest they go at the heart of the issue and disprove that a difference in Old Growth forest and second growth forests evapotranspiration is not around 0.088 area-mm/day. If it can succeed in that then it need not write another word than its proof and I will retreat, lick my wounds, hope they heal, and fight this battle in another way, and if I live long enough. Ancillary to that project they might as well complete the job and show the Fundamental Evapotranspiration Equation (FEE) has little or no utility in determining effects, what ever the evapotranspiration rates are. OK?

Now just in case the Forest Service does not succeed I have applied the case histories of attachment #2 and #3 to a global employment of FEE to estimate the cumulated effect of all the planned cutting to the year 2010 on baseflow in the project area for alternative F for a total cut of 4,576 acres (Table 4-20, p. 4-34 of the DEIS) of drainage with a total land area of 35,723 acres (from Table 4-20, col. 7).

The effect of second growth forests on c-water volumes' originating from the 4,576 acres of second growth is by estimation the initial streamflow level of Project Area Creek (a name I have given it) at which initial baseflow N_0 begins from the 4,576 acre drainage in second growth forests. That N_0 may be determined, is shown by estimating it from FEE (Attachment # 1). Letting $f_r = 1$, $c = .0052014$, $K_2 = .89$ and $K_1 = .83$, from table 3 and table 4 respectively in attachment # 1, and $evap_{tr} = .088$ area-mm/day for the difference in the two baseflow evapotranspiration regimes $evap_{tr}$ determined from data of Stanley Creek, AK and WA#1 of H. J. Andrews Experimental Forest, OR (Table 5 of Attachment # 1) then FEE predicts the initial baseflow $N_0 = 4.8$ cfs.

Table 1. Projected difference in baseflow $4.8 * K_i$, $i = 1, 2$ (cfs) between baseline Old Growth forest and second growth forests of Project Area Creek.

time t days	Old Growth $K = .89$ a-water volume	second growth $K = .83$ c-water volume	% difference, 2nd growth forest effect.
0	4.8	4.8	0.00
1	4.27	3.98	6.8
2	3.80	3.31	12.9
5	2.68	1.89	29.5
6	2.38	1.57	34.0
7	2.12	1.30	38.7

FS Response

RTM-2 Comments noted regarding the Indian River Watershed Analysis.

Now let me be clear about Project Area Creek. It is a stream that contains all the flow difference between the Old Growth forest of Project Area Creek of 12.8 % of the total drainage of 35,723 acres or 4,576 acres which will eventually be in second growth forests according to Alternative F. One can consider all the streamflow from the other 31,147 acres as unaffected by cutting and could be considered a drainage of a tributary or instead be the mainstream and the Project Area Creek and its 4,576 acre drainage forming the tributary. The difference in the different rates of baseflow decrease by days from the initial baseflow of 4.8 cfs is shown in table 1 by comparing the a-water volumes of Old Growth forest (column 2) with c-water volumes of second growth forests (column 3). It is seen from column 4 of table 1 that there is a challenge to determine the frequency distribution of the low flows. Indeed, it appears it is required under National Forest Management Act Regulations 36 C.F.R. at § 219.23 Water and soil resource, "Forest planning shall provide for-- (c) Estimation of the probable occurrence of various levels of water volumes, including extreme events which would have a major impact upon the planning area. . . These probabilities may not be as difficult as it may seem. For example, the lowest summer low flows from 1989 to 1996 for Stoney Creek were respectively in cfs were 20.1, 16.7 38.7, 38, 5.5, 22, 19.9, and 14.1. All but two--the streamflows of the two wet summers 1991 and 1992 with 38.7 cfs and 38.0 cfs, were less than the Stoney Creek initial baseflow $N_0 = 32$ cfs. Frequency distributions such as suggested by Murphy (1985)³ determined from precipitation records are possible.

Column 4 of table 1 you will note is the difference between baseflow volumes of Old Growth forest and second growth forests. Crudely, it is also the amount of fish habitat available during low flow baseflow conditions occurring in the summer. If the summer is particularly dry a rainless period of 7 days might bring on a 38 % reduction in habitat, according to table 1. That is unacceptable, if true. The Forest Service would not have this problem, if true, had it followed NFMA regulations, CFR at § 219.23 "Forest Planning shall provide for-- (e) Evaluation of existing or potential watershed conditions that will influence soil productivity, water yield, water pollution . . ." and the DEIS has not attempted such an evaluation to demonstrate if there are not effects.

I don't know how to spell out what the Forest Service hydrologists should be doing any clearer than this. As I said at the beginning, if the Forest Service wants to terminate this kind of criticism it should not depend upon labeling the Myren and Ellis paper as "speculative" to do the job (see below) but instead put some teeth in the criticism. All it requires is to determine the difference in the evapotranspiration rates between Old Growth forest and second growth forests of 0.088 area-mm/day between the two regimes is unfounded. I was surprised the IRWA could not cite more literature in support of its position on the Myren and Ellis paper.

Selected Comments by Page on the Indian River Watershed Analysis.

P. 40, 3rd para., 1st sentence. "Reduction in . . . low flows . . . resulting from increased evapotranspiration rates from Old Growth forest to second growth forests is a new issue." (Emphasis here and hereafter added). What cowardice to not take responsibility for the failure of recognition by labeling this a "new" issue. Does the appearance of Myren and Ellis paper in the 1983 symposium and 14 years ago make this a "new issue"? Does the Hicks *et al.*, 1991 publication 6 years ago make it a "new issue"? And before its publication 13 years earlier in 1978 I raised this issue with Forest Service hydrologist Louis Bartos. (Furthermore, Dr. Brendan Hicks told me while a graduate student at Corvallis he had read the Myren and Ellis paper and it had a bearing upon his interest which lead to the 1991 publication. Does former Chief Thomas's directive to the Regional Forester following the Central Prince of Wales EIS 1994 Appeal dated February 2, 1994 which stated, ". . . I direct the . . . Region initiate a monitoring plan to validate the model employed to estimate the cumulative effects of timber harvest on streamflow." "Emphasis added) and 3 years ago make it a new issue? No, it does not. Is labeling it a "new issue" because of the Forest Service failed to take timely action? That is the new issue.

RTM-2
(cont.)

p. 40, 3rd para., 3rd sentence. Hicks *et al.*, reported regarding your statement that "Low flow changes are most likely to occur where a significant portion of the stream riparian area has been harvested (Hicks *et al.*, 1991)." is not what Hicks said or implied. They employed surrounding their statement which the Forest Service interprets as the basis of its management directive, "If the establishment of hardwoods in the riparian zone following clearcut logging has cause water yields of WSI to drop below predicted yields, as we suggest, then future forest harvest practices should protect conifers in the riparian zone during logging to suppress hardwood growth and thereby maintain summertime water yields." (Emphasis added.) with qualifiers such as "if . . . has caused . . .", "may have been responsible", "were thought", "not entirely understood", "are likely", and "possibly". They endorsed keeping Old Growth forest not second growth forest in the riparian zone. They end with, "In view of the importance of the existing hydrologic records from WS 1, 2, and 3 in the H. J. Andrews Experimental Forest, continued collection of hydrologic data from these watersheds is imperative." Hicks *et al.*, is still a work in progress, in no means completed, with a second growth period less than two decades being compared to an Old Growth forest which involved centuries to develop.

The Hicks *et al.*, publication six years ago stated that the continued collection of hydrological data from H.J. Andrews Experimental Forest was "imperative". Some of the reasons why it was imperative are the unanswered questions which Hicks *et al.*, posed. They include: (1) Note that the conifers to be protected are Old Growth conifers not second growth conifers. Why? (2) Note that baseflows did decrease in second growth, which in part validates Myren and Ellis though it was tentatively assumed to be due to hardwoods. Can it be assumed that evapotranspiration rates in Old Growth forest and second growth forests are the same? (3) If total water loss through evapotranspiration is a function of leaf area then is not leaf area increasing as increased shading of the conifers over top the hardwoods and total evapotranspiration will be as great as the hardwoods if not greater? And this is a "new issue" now! The only reason it is attracting attention now, in my opinion, is because I had reported often its absence in Forest Service EIS documents.

These statements may exhaust what Hicks *et al.*, said and did not say about the subject. A critical review of the Myren and Ellis paper will show it is no more speculative than the speculation which Indian River Watershed Analysis IRWA (p. 40) presents in its attack on our paper with its misrepresentation of substance of what Hicks *et al.*, reported.

What is important about the Myren and Ellis paper is we proposed that the Forest Service look at this problem of second growth forests increased evapotranspiration. We reported evidence for the phenomenon which was not available from field observations at the time in the United States but theory and plant physiology suggested supporting evidence. We cited supporting evidence from Russian literature. Our paper was a cautious and deep exploration of the existing literature at the time on the subject. We clearly stated,

... Extrapolating from the literature leads to the conclusion that converting significant portions of old-growth watershed to rapidly growing second-growth risks permanently reducing summer low flows of the streams, and, thus their ability to produce salmon. It is recommended that this risk be considered in managing the forest and that effects on streamflow of converting old-growth forest to second-growth forest be included in studies of logging in southeast Alaska." (From the ABSTRACT).

We also say in the INTRODUCTION,

... In the short term, cutting the trees reduces evapotranspiration and increases summer baseflows of streams. In the long term, however, forest succession after cutting results in increased transpiration and probably reduced streamflows. Although the short-term

increases in streamflows following cutting are well-known, the long-term changes in minimum streamflow and the possible effects on fishes during forest succession are not."

In the SUMMARY AND CONCLUSIONS we say,

... The circumstantial evidence summarized here indicates that . . . we may be permanently impairing the ability of many of our streams to produce salmon. The first steps in defining the problem will be to determine what changes in evapotranspiration and minimum streamflows occur as a result of various logging practices for each of the soil-watershed types in southeast Alaska . . . At the present rate of cutting our old-growth forests, especially those highly productive forests on our most productive streams, most of the damage would be done before we have positive proof that it is occurring.

We recommend that the potential for significant reductions in low-flow conditions resulted from conversion of old-growth forests be considered in evaluating potential logging plans. This consideration must be extended to the smaller watersheds and tributaries which produce most of the coho salmon and trout in Alaska and would be most vulnerable. The risks to fisheries resources are high in many streams, and the effects would be essentially irrevocable."

This is not "speculation". What Forest Service interpreted as our speculation was simply our request for the facts when evapotranspiration is likely to occur at different rates during forest succession. And it certainly is not a "new issue". How much longer will Forest Service hydrologists sit on their hands. But this is the old story of Forest Service resistance and delay. Did the reduction in low flows resulting from increased evapotranspiration become labeled as a "new issue" originate from the field offices or higher? I hope the Forest Service will not cite studies instituted recently by the Forest Sciences Laboratory as why the Region has a change of heart, if it has. A significant part of it has already been done without taxpayer's expense in the enclosures and these comments, in my opinion. I wonder how diligently the Forest Service has maintained the measurements on the H. J. Andrews Experimental Forest as recommended by Hicks *et al.*.

Other Selected Comments

P. 40, 2nd para., IRWA statement that management effects upon streamflow begin when summer low flow volumes after 35% of the forest is cut is incorrect. They increased before 35 % was cut, indeed they were increasing after the first tree was cut and according to the relatively crude methods of observations of increases in stream flow the increased flow was observed after 35 % cut. TLMP has now recognized that increases were evident and observable upon reaching 20 % cut.

It is interesting how the Forest Service made the decision in the revised TLMP process to pull the only single hard won solid concept over the past several decades since the inception of large scale logging the percent and duration of cut rule based on solid evidence, a refreshing change from some of the conceptual basis of other policies and cutting decisions, of Louis Bartos, in effect replacing hard quantitative specification with bureaucratization of the language in effect dismissing as a standard and placing it on a slippery slope of non-quantitative qualitative gobbledegook (ROD May 1997 TLMPR, p. 18),

... The standards and guidelines and other direction of the Forest Plan I am approving today meet or exceed all of those recommendations by AFHA, and include some of the features of option 1. These standards are guidelines will be applied in all watersheds on

RTM-2
(cont.)

the Forest, and are sufficient to protect fish habitat and provide for sport and commercial fisheries and subsistence."

Over the years unbeknown to the public for it was a heavily guarded secret that erosion was occurring on Stanley Creek due to short term increases in low stream flows and these erosion processes were accelerated elsewhere when ever cutting occurred immediately after clearing of Old Growth forest. A paper trail in the EISs can be followed back to how the Forest Service was concerned about setting limits to the amount of cutting over a fixed period of time. Does the Forest Service really

believe that its public will not observe that it has moved the yard line in the middle of the game! As a matter of documenting the reality of Louis Bartos original work on short term streamflow increases following logging may be drawn from the H. J. Andrews Experimental Forest WA#1 by observing that the evapotranspiration decrease and hence streamflow increase is given in Table 2 of Hicks et al..

For example, for August the difference in the observed water yield of the pre-logging period was 5.7 mm /month and the short-term after-logging 1962-1969 period 10.1 mm divided by 31 days gives a rate of 0.142 area-mm / day. Translating this result to Stanley Creek by substituting $\text{evaptr} = 0.142 \text{ mm}$ into FEE and assuming the Old Growth recession coefficient is $K = 0.89$ then one can solve for the recession coefficient for the period of increased flow. It turns out that it is a $K = 0.95$! Now this is the result I obtained several years ago for the short-term increase in baseflows (Myren, unpublished) and shown in the figure 1. That is to say, the recession coefficients for the cleared forest of AEF WA#1 are the same as for the cleared forest of Stanley Creek or $K = 0.95$ obtained by simply analyzing published USGS daily streamflow records.

My purpose here was not only to demonstrate the universality of Bartos work but that it was scientifically sound from a different approach and that it has significant utility in management decisions for both southeast Alaska coastal rainforest and the inland more arid Andrews Experimental Forest WA#1. Both watersheds operate under the same physical and biological laws and share similar hydrology in many respects.

P. 80, 1st para. As I have repeated before but I will say it more bluntly now that this paper of Paustain

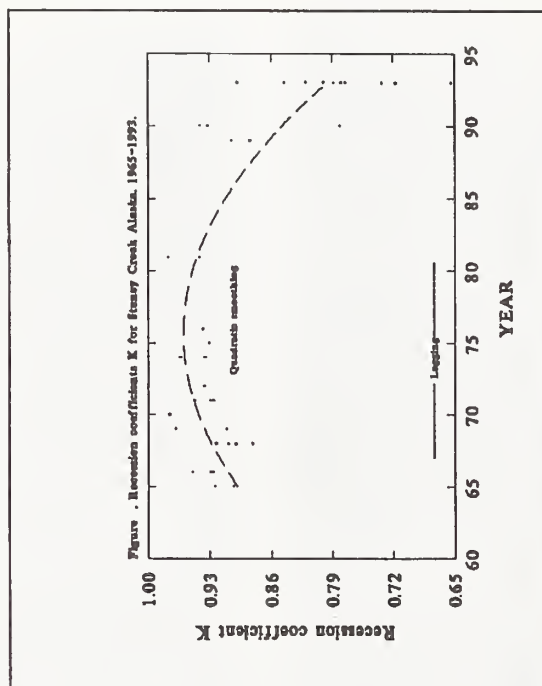


Figure 1 Recession coefficients K for Stanley Creek, Alaska 1965-1993

RTM-2
(cont.)

FS Response

RTM-2 (cont.)

(1987) is a fraud. My criticism is enclosed again (Attachment # 4). If the reader does not want to wade through my criticism, just find a competent statistician and ask him or her if one should test hypothesis for difference in two levels of a variable (in this case suspended sediment) without first freeing the variable from a third variable streamflow that is correlated to the levels being tested. However, the Paustian paper shows the effect of differences in streamflow between the two periods for a difference in amount of suspended sediment between the two periods was not controlled prior to testing. I would suggest this course because I may have made some mistakes in my analysis in attachment # 4 but such errors are trivial relative the main concern of about the method require to test for differences between the pre- and post-logging suspended sediment levels.

I will leave the Risk analysis to others to evaluate. I am not sure that no matter how well it is done much less logging in the drainage areas of fish producing streams would solve the risk problem. Years ago we were assured by Forest Service hydrologists that rain on snow events were extremely rare and hence posed little to no threat and now IRWA cites the possibility several times.

Comments on Indian River DEIS, Volume 1

RTM-3

p.14 ch.3 line 18. . . . Sediment data collected. . . . This statement is incorrect. See previous comments.

RTM-4

p. 78, Ch. 4, line 16, "Soil and water . . . resources would be protected in all alternatives . ." and line 20. . . . "no long-term effects to the water resource are expected to occur (that would "affect wildlife habitat)(Text in parenthesis inserted from context of the paragraph.) This DEIS statement has no foundation in the DEIS because it has not been demonstrated in the DEIS. Relative to fish habitat the Forest Service must refute the kind of argument and approach I have put forth earlier in these comments.

RTM-3 The sentence says in its entirety, "Sediment data collected from Indian River between 1977 and 1981 indicate that past timber harvest activities had no measurable effect on turbidity or fine sediment concentrations in the river." The information stated here is correct.

RTM-4 The paragraph referred to is in the "Relationship Between Short-term Uses and Long-term Productivity" section in Chapter 4. This section summarizes information presented earlier in the Soils, Water, and Fish section in Chapter 4.

Direction for the fish habitat analysis used for this project is contained in the Watershed Analysis Handbook (Draft Version 2, July 1997).

Endnotes

1. See supporting documents in Attachment #2 (of TLPM Appeal Issue #1) for the description of a, b, and c-water volumes.
2. $c = (12^3 * 24 * 60 * 60 * 2.56^3 * 10^3) / (((4576) / 640) * 5280^2 * 12^2 * 2.56^2 * 10^2) = .005201$
Evaptr units are in area-mm/day where baseflows were initially expressed in cfs.
3. Murphy, M. L. 1985. Die-offs of pre-spawn adult pink salmon and chum salmon in Southeastern Alaska. North Am. Jour. of Fish. Mgmt. 5: 302-308.
4. Directive from Bill McLeese, USDA Timber Management Washington D. C. dated February 2, 1994 to appellants of the 18 page appeal finding for the Central Prince of Wales Project signed by Chief Jack Ward Thomas.

R. T. Myren
1/24/98
file_.ind9

January 12, 1998

Lynn Shipley, Team Leader
USDA Forest Service
Tongass National Forest, Chatham Area
204 Signaka Way
Sitka, AK 99835

RE: Indian River Timber Sale
in Tenakee

Dear Lynn:

As a frequent recreational user of the Tenakee forests and waterways, I strongly object to the proposed Indian River Timber sale.

The long term impacts associated with this timber sale are simply not worth what little value the public will receive from this sale. This is a public resource and does not belong to the US Forest Service or the logging interests. I object to the building of additional roads, reducing critical deer habitat, potentially damaging fish and crab habitat and stocks, as well as the impacts to the community of Tenakee. I am also opposed to any road construction that would bring the Hoonah road system any closer to the community of Tenakee.

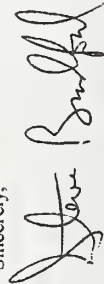
The Tenakee area has already been hard hit by past logging activity in Corner Bay and next will be Crab Bay. It takes generations for the forest to recover, we will never see the recovery in our lifetimes. Glass Peninsula was logged in the 1960's-almost 40 years ago-and we still have the scars and no forest today.

I would not be opposed to some selective cutting in this area as long as the loggers clean up the brush like they do down South. Since it appears that the only real gain from the logging activity is the jobs produced, additional brushing would provide even more additional Alaskan jobs.

I think it is time for the US Forest Service to recognize the real value of our forests. We are in the recreation and tourist business now, not resource extraction! Think selective cuts, not clear cuts. This way some harvest occurs without totally impacting the forest by denuding the vegetation, setting up different microclimates, erosion, destroying deer habitat, etc.

If you really want to show some leadership in Forest Management, why don't you stop the Crab Bay clear cut, and do a selective cut instead? The Forest Service could use some good public relations these days. This would be a good place to start. Thanks for this opportunity to provide input.

Sincerely,



P.O. Box 20098

Juneau, AK 99802

FS Response

SB1-1 Comment noted.

SB1-2 Refer to Response ADF&G-9.

SB1-3 Refer to Response ZS-26.

SB1-4 In forests in the lower 48 states ("down South"), brush is removed after logging to prepare the ground for tree planting and to reduce fire hazards. There is very little tree planting in South-east Alaska because natural regeneration provides so many more trees than are necessary to regenerate harvested units. There are also very few fire hazards related to the amount of brush in timber harvest units.

SB1-5 The Forest Service manages on a multiple-use, sustained yield basis.

Refer to Response SEACC-13.

SB1-6 Crab Bay is located in the Finger Mountain Project Area; therefore, it is outside the scope of this EIS to consider harvest method prescriptions for that area. A copy of your letter has been given to the Finger Mountain Timber Sale Project interdisciplinary team for consideration in that EIS.



Sitka Conservation Society

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Lynn Shipley
USDA Forest Service
Tongass National Forest, Chatham Area
204 Signaka Way
Sitka, AK 99835

January 20, 1998

Re: Comments on the Draft EIS for Indian River Timber Sale

Dear Indian River Planning Team,

After reviewing the Draft Environmental Impact Statement for the Indian River Timber Sale Project, Sitka Conservation Society submits the following comments:

The Sitka Conservation Society does not support the proposed action for the Indian River Timber Sale. SCS supports the No-Action Alternative.

1. The Purpose and Need Provided in The DEIS Is Fundamentally Flawed

The DEIS states as goal 1): "improve timber growth and productivity on suitable lands made available for timber harvest, and manage these lands for a long-term sustained yield of timber". SCS believes this objective of converting the Tongass Forest into a "productive" tree farm is decades behind current science and light years behind public demand for a more balanced approach to management of the national forests. Removing "disease and decay" from the forest in favor of developing "managed forest land" is not in the best interest of local communities, the forest ecosystems, or the vast majority of the general public interested in enjoying the resources of the Tongass National Forest.

Goal 2) of the DEIS talks about meeting market demand for timber and contributing to a timber supply. It seems that the Forest Service is planning to make more timber available than is demanded by the market. The discussion on market demand (chapter 1 p 4) is a perfect example of the Forest Service using a variety of numbers to confuse the public and to justify continued unsustainable timber harvesting. Why does it only discuss the volume of sawlogs to be available? Why is the volume committed to KPC excluded from the supply (isn't it still part of the timber industry)?

The third goal of "providing opportunities for local employment in the woods products industry" seems impossible to justify given the fact that the majority of forest-based industries that sustain the local economies around the Indian River area (Tenakee, Angoon, Sitka, Hoonah, and Juneau)

Working to conserve the natural environment of the Tongass Forest and to protect Sitka's quality of life.

FS Response

SCS-1 Comment noted.

SCS-2 Comment noted.

SCS-3 The market demand portion of the Purpose and Need section in Chapter 1 and Appendix A have been updated and the figures modified where necessary.

Comment noted.

Refer to Response SEACC-4.

KPC is part of the timber industry. The 3-year commitment to supply KPC with timber volume under the long-term contract expires in the year 2000, before timber from this Project Area would be available. Also, very little, if any, timber volume from this project area is expected to go to KPC to satisfy the commitment.

SCS-1

SCS-2

SCS-3

SCS-4

are dependent on intact, healthy forests. Tourism, recreation, sport and commercial fishing, and subsistence need to have a forest that provides fish and wildlife habitat, scenic beauty, wildness, silence and solitude. Providing a reliable supply of wood may help local employment in other communities in other states and other countries but it will do very little contribute to community economies in this part of the Tongass. In fact, the timber harvest activities proposed in the DEIS will have an overall harmful effect on precisely the local economies it professes to help by lowering the environmental qualities mentioned above.

2. The DEIS Does Not Provide Real Alternatives To Clearcutting

The alternatives offered by the forest service artificially narrowed its options and improperly predisposed it towards large-scale clearcutting on the Indian River Timber Sale.

NEPA requires a "detailed statement ... on ... alternatives to the proposed action ..." 42 U.S.C. § 4332(2)(c). It further requires agencies to "[s]tudy, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources. *Id.* at § 4332(2)(E). As the CEQ advises, consideration of alternatives is "the heart of the environmental impact statement." 40 C.F.R. § 1502.14.

Agency planning regulations recognize the importance of a broad range of alternatives in the forest planning process. "The primary goal in formulating alternatives, ... is to provide an adequate basis for identifying the alternative that comes nearest to maximizing net public benefits, consistent with the resource integration and management requirements of § 219.13 through 219.27." 36 C.F.R. § 219.12(f). To achieve NEPA and NFMA's goal, the Forest Service is required to "... take into proper account all possible approaches to a particular project ... which would alter the environmental impact and the cost-benefit balance ..." *Id.*, (quoting *Bob Marshall Alliance v. Hodel*, 852 F.2d 1223, 1228 (9th Cir. 1988), *cert. denied*, 489 U.S. 1066, 109 S.Ct. 1340, 103 L.Ed.2d 810 (1989)).

The range of alternatives considered by the Forest Service in the DEIS fail to consider all possible approaches to harvesting timber in the Indian River area. This failure occurred despite strong public pressure for the Forest Service to dramatically change its management approach on the Tongass (specifically, stop clearcutting), and strong scientific evidence that a dramatic shift in management emphasis was needed.

During the TLMP Revision process nearly 70 percent of the personal letters submitted to the Forest Service about the Revision, and 60 percent of the individuals testifying at public hearings in southeastern Alaska, requested that clearcutting be eliminated. At recent public hearings in Tenakee, Sitka, Hoonah and Angoon and in written comments, most people testified that they did not support more clearcutting. Despite the public comments the range of alternatives considered by the Forest Service was artificially predisposed to those which would result in large-scale clearcutting.

FS Response

SCS-4 Comment noted.

SCS-5 Refer to Response SEACC-8, SEACC-13, and SEACC-23.

SCS-5
(cont.)

No alternative considered by the Forest Service allocated a reasonable amount of land to selective logging as the predominate silvicultural system. Although the DEIS says that each alternative incorporates both even-aged and uneven-aged management, the project alternatives contain only token amounts of harvest other than by clearcutting (please see table below).

Volume comparison of Alternatives by harvest type

Harvest Type	Alt. B	Alt. C	Alt. D	Alt. E	Alt. F
Clearcut	87%	93%	92%	93%	94%
Selection	13%	7%	8%	7%	6%

Under TLMP "the determination of which harvest method to incorporate in a timber sale project will be made considering site-specific information as part of project-level, decision-making using Forest Plan standards and guidelines." See TLMP ROD at 17. The DEIS leads us to believe that the logging methods to be implemented in the adopted alternative is a reasonable mix of clearcutting and other methods. None of the alternatives, however, take a "hard look" at significantly utilizing any other logging method than clearcutting. Consequently, the Forest Service lacks a reasonable basis for making a determination that any of the proposed alternatives are the best for achieving the multiple use goals of the Indian River area.

In the DEIS the Forest Service proposes an alternative in which the nearly exclusive logging method to be implemented is some form of clearcutting, primarily because it will allow for more efficient logging of large volumes of timber. This decision is reached in the face of its own analysis demonstrating that clearcutting causes significant damage to fish and wildlife, water, soil and watershed, subsistence, recreation and aesthetic resources and that much of that damage could be prevented by using selection methods which effectively mimic the dominant natural patterns of disturbance on the Tongass. By elevating timber over all other competing values of the Tongass, the Forest Service has violated the requirements of TLMP and the NFMA.

It is apparent from this review of the Indian River Timber Sale DEIS that the Forest Service's rationale for clearcutting is that the dollar return and timber output factors are the ones that drive the decision to select clearcutting in the project.

3. The Alternatives Do Not Adequately Protect Caves and Karst Resources

The Proposed Action does not outline sufficient protection of caves and karst resources, as the text merely suggests protection "to the extent practical, of significant caves and karst".

We were pleased to note that karst vulnerability was initially assessed for the Indian River Project Area, however we note some problems with the Karst Vulnerability Assessment Final Report, upon which the karst portions of the DEIS are presumably based.

SCS-6

SCS-7

FS Response

SCS-6 These are the words used in the Policy portion of Section 2 in the Federal Cave Resources Protection Act of 1988 (16 U.S.C. 4301).

FS Response

SCS-7 Refer to Response TCP-2, TCP-3, and TCP-4.

SCS-8 Refer to the last two paragraphs of Response SEACC-5. The Forest Service will continue to provide opportunities for subsistence uses as provided for in ANILCA.

- Steep slopes were eliminated from consideration in defining high vulnerability areas on the basis of soil depth.
- Final TLMP Karst Standards and Guidelines appear to have been largely ignored in sale planning.
- According to a report compiled by the Cave Project several units and roads located on karst are included in the alternatives.
- High vulnerability karstlands have not been removed from the timber base and no explanation is provided as to mitigation planned for harvest on moderate vulnerability karst.
- Roads seem to have been planned without regard to karst terrain.
- There is no explanation of why roads must be placed on high vulnerability karst or discussion of alternative locations for roads.
- These problems must be addressed in the FEIS.
- Only one Unit Card for harvest on karst (VCU 2200, Unit 1511) gives any instructions for further examination of the unit for karst by layout and other crews. Even in this instance the instructions are inadequate karst features include much more than just caves, insurgences and resurgences.
- It is not clear from the DEIS that the authors are aware that cave features and karst features are interlinked and that protection of the caves necessitates protection of the karst.
- We hope the FEIS will meet all the requirements of the TLMP Karst Standards and Guides and the Federal Cave Resources Protection Act and that any ensuing harvest will also meet these requirements on the ground.

SCS-7
(cont.)

4. The Alternatives Do Not Adequately Protect Deer Habitat

As stated in the DEIS, the Indian River area is used heavily by both subsistence and sport deer hunters. It goes on to say that all of the alternatives would result in a reduction of deer habitat and thus a decline in deer populations. This result of management is unacceptable for communities so reliant on forest resources.

The proposed harvest of millions of board feet of timber in the Tenakee Springs vicinity would damage subsistence resources for the residents of that community, especially any additional logging activity in VCU 2200 which is located directly adjacent to town. The proposed logging would also impact subsistence use from Hoonah residents as well as sport hunting use from residents of Juneau. The DEIS admits that there may not be enough deer in the project area to meet the demand. Because of growing hunter demand and resource reduction due to past logging and future logging, "a significant possibility of a significant restriction on subsistence uses may exist in this ... area." The Forest Service should be working to increase the potential deer habitat in the area rather than to destroy it as the proposed logging will do. The Tenakee Springs area has already experienced extensive clearcutting, and every effort must be made to ensure subsistence lands for use of residents now and in the future.

SCS-8

FS Response

5. The Alternatives Do Not Adequately Protect Wildlife Habitat

Over the many years of past timber harvest in the Tenakee Inlet area a great deal of the large, contiguous portions of old-growth habitat has been lost. The Indian River Timber Sale project will continue the trend of:

- Habitat Fragmentation
- Riparian Habitat Loss
- Converting Wildlife Habitat to Tree Farms, and
- Stressing and Limiting Sensitive Species

SCS-9

The resulting habitat fragmentation and damage will result in unacceptable habitat losses for several old-growth dependent, sensitive species including: Marbled Murrelet, Brown Bear, Marten, and Queen Charlotte Goshawk. All of these species are known to use the Indian River area for foraging, breeding and reproduction and over-wintering. All of these species will be negatively impacted by additional logging in the proposed project area. The risks to these wildlife populations is too great to justify conducting below-cost timber sales in the area.

6. The DEIS Demonstrates that No More Permanent Roads Should Be Built

The proposed alternative would result in 7.8 miles of new, permanent road and would rebuild 21.6 miles of existing roads. This seems ridiculous in the face of the fact that the Tongass National Forest currently has over 4700 miles of permanent, maintained USFS roads that provide access to over 2.7 million acres of land. These areas include more than 360,000 acres that are tentatively suitable as commercial forest, and contain over 8.5 billion board feet of timber that meet the requirements of the new forest plan. Nearly half of all harvestable timber on the Tongass is within 1 mile of an existing USFS road. However, 90% of future timber sales are planned in roadless areas and only 10% are based on logging from existing infrastructure. This does not make sense especially considering the high costs (both economic and environmental) involved in building roads on the Tongass.

SCS-10

Building new roads is expensive and the negative impacts from logging roads are numerous. The Forest Service should go to great effort to avoid building new roads when possible. The proposed alternative contains too much unnecessary road building.

Sitka black-tailed deer, an important species for the Indian River area, will be harmed by additional roads in the project area. The DEIS states that "Cumulatively, there is a significant possibility of a significant restriction [of subsistence use of deer for Tenakee Springs residents] at some time in the future, due to an ever increasing human population and associated hunting demand and declining deer habitat capability." While it is recognized that there will be fewer deer as a result of the planned logging, the DEIS does not recognize the issue of additional hunting pressure in the future as a result of greater access via the additional roads resulting from the proposed project.

SCS-11

SCS-9 Refer to Responses SEACC-32, SEACC-35, USDOL-3, USDOL-4, USDOL-7, USDOL-8, USDOL-12, and ADF&G-28.

SCS-10 The alternatives provide a range of new road construction from 7.8 miles to 9.6 miles, reconstructed roads from 10.7 to 22.3, and temporary roads from 2.1 to 4.32 miles. Only necessary roads are included in the alternatives.

SCS-11 The Subsistence section in Chapter 4 considers the impact of increased access from roads open to motorized vehicles. This is also a consideration in the development of Road Management Objectives. See Appendix D, Road Management Objectives for roads to be closed.

SCS-12

Another result of road development and use is unacceptable damage to critical riparian areas which can cause loss of habitat for both fish and wildlife. Within the project area there are already over 6.5 miles of road within stream riparian buffers. Under the "proposed action" an additional 7.4 miles of road will be built within the riparian buffers which are critical fish and wildlife areas. (Chapter 4 p11)

SCS-13

Additionally, building roads across streams results in further unacceptable impacts to critical riparian and stream habitat for both fish and wildlife. Over one hundred fish stream crossings already exist within the Indian River project area. Forest Service surveys revealed that many of the existing bridges and culverts making these crossings would need to be replaced to facilitate further logging. This, combined with 28 new fish stream crossings in the proposed alternative, would result in significant activity in streams that are important to both fish and wildlife. This is another important reason that no more roads should be built.

SCS-14

Tenakee Inlet already has an extensive system of logging roads in several drainages within the Inlet. No new roads should be built in the Indian River project. If timber must be harvested in the area the timber should be removed by helicopter if it is not within reach of an existing road. It is generally accepted that helicopter harvest is feasible within one mile of a "drop point". In the Indian River Sale area the vast majority of proposed harvest units fall within one mile of an existing road. For instance, in Alternative B only 1.9 MMBF of timber (less than 8% of the total volume) in the proposed sale units are more than one mile from an existing road.

SCS-15

Another problem resulting from the proposed road building is that it appears the Forest Service is attempting to connect the Tenakee road system with the Hoonah road system against the wishes of the public and in violation of agreements made with both Tenakee and Hoonah.

SCS-16

The DEIS for Indian River fails to adequately evaluate the long-term, cumulative impacts of past, present and planned timber sales in the Tenakee area. The requisite "hard look" at cumulative impacts must include the impacts of simultaneous logging operations on the resources and lifestyles in the Tenakee area. The Forest Service is in the process of planning another large timber sale (Finger Mountain) in Tenakee Inlet. The public needs to know exactly how much of the Tenakee Local Use Area has already been damaged due to past logging in the area and it needs to know what life will be like in the Inlet as a result of two major logging operations in progress simultaneously.

FS Response

SCS-12 The number of miles of road constructed in stream riparian buffers mentioned here (7.4 miles) is a cumulative number. There are 6.6 miles of existing road in what are now identified as stream riparian buffers. The alternatives include a range of new road construction in or through these buffers from 0.8 miles to 1.2 miles. The Preferred Alternative builds 1.1 miles of new road construction in or through stream riparian buffers.

SCS-13 Refer to the Road portion in the Soils, Water, and Fish section in Chapter 4 of the EIS for impacts of road construction on aquatic resources.

SCS-14 Refer to Response SEACC-39.

SCS-15 Refer to Response ADF&G-9. We are not aware of any agreements made between the Forest Service, City of Hoonah, and City of Tenakee Springs regarding road connections.

SCS-16 Cumulative impacts of past, present, and planned timber sales in and near the Project Area are considered in Chapter 4 of the EIS.

We are unfamiliar with the term, "Tenakee Local Use Area," and its location, or its relationship to this EIS.

7. The DEIS Does Not Adequately Assess Cumulative Impacts

SCS-17

8. No Alternative is Compatible With Current Uses of the Project Area

Many people from Tenakee as well as other communities use the project area for recreation, subsistence, sport, and economic activities. All action alternatives will displace most of these current resource users for at least three to five years during project operations and likely much longer than that for many current users.

9. No Alternative Results in an Above-Cost Timber Sale

It is interesting and frustrating to note that under all alternatives the Indian River Timber Sale will result in a loss to the U.S. Treasury. This means that once again the U.S. taxpayers will be asked to subsidize the timber industry in order to build unwanted and unnecessary roads, to convert invaluable old-growth forest into commodities, and to further reduce the ability of the forest to sustain viable populations of fish and wildlife.

SCS-18


FS Response

SCS-17 . Comment noted. See the Recreation, Subsistence, Wildlife, and Economics and Social Values sections in Chapter 4 for impacts, such as displacement, to users of these resources.

SCS-18 Timber sales resulting from this EIS may not necessarily result in a loss to the U.S. Treasury. Refer to Response TK-3.

Thank you for accepting our comments on the Indian River Timber Sale DEIS.

Sincerely,



Brian McNitt
Executive Director

Southeast Alaska Conservation Council

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January 20, 1998

Linn Shipley, Team Leader
USDA Forest Service
Tongass National Forest, Chatham Area
204 Signakwa Way
Sitka, AK 99835

RECEIVED
JAN 22 1998

CHATHAM AREA
SUPERVISOR'S OFFICE

Re: Comments on Indian River Timber Sale(s) DEIS

Dear Mr. Shipley:

The following comments are submitted on behalf of the Southeast Alaska Conservation Council (SEACC) on the Indian River Timber Sale(s) Draft Environmental Impact Statement (DEIS).

SEACC is a coalition of fifteen volunteer conservation groups in twelve communities across Southeast Alaska, from Yakutat to Ketchikan, including Chichagof Conservation Council in Tenakee Springs. SEACC's individual members include Alaska Natives, subsistence users, commercial and sport fishermen, hunters and guides, tourism and recreation business owners, small timber operators and high value-added wood product manufacturers, as well as concerned citizens from all walks of life. SEACC is dedicated to safeguarding the integrity of Southeast Alaska's unsurpassed natural environment while providing for balanced, sustainable use of our region's resources.

Introduction

As of March 27, 1997 the last of Southeast Alaska's pulp mills has closed and the last long-term contract is terminated, per agreement. The Forest Service finally has the opportunity to create a transition away from the failed policies of the past towards a truly balanced, sustainable management of our largest, wettest, and wildest National Forest. With the current sea change underway on the Tongass, the Forest Service has the opportunity to provide for all of the uses of the forest while encouraging the development of a small-scale community-based high-value added wood products industry in Southeast Alaska. As the first DEIS on the Chatham Area released after the completion of the revised Tongass Plan, the Indian River Timber Sale(s) offers an opportunity to begin this transition. SEACC also takes a keen interest in this sale because it reflects how the agency will implement the new Tongass Plan.

Considering all of the time and money spent drafting this timber sale, we are deeply disappointed with the completed document. The Forest Service has failed to respond to the new reality on the Tongass and failed to complete a draft statement which incorporates the best available information and responds to the needs and values of local communities and the American public.

LYNN CANAL CONSERVATION: Haines • FRIENDS OF GLACIER BAY: Gustavus • FRIENDS OF BERNERS BAY: Juneau
WRANGELL RESOURCE COUNCIL • ALASKA SOCIETY OF AMERICAN FOREST DWELLERS: Point Barrow • PELICAN FORESTRY COUNCIL
ALASKANS FOR JUNEAU • NARROW'S CONSERVATION COALITION: Petersburg • TONGASS CONSERVATION SOCIETY: Ketchikan
CHICHAGOF CONSERVATION COUNCIL: Tenakee • JUNEAU GROUP: SIERRA CLUB • SITKA CONSERVATION SOCIETY
TAKU CONSERVATION SOCIETY: Juneau • PRINCE OF WALES CONSERVATION LEAGUE: Craig • YAKUTAT RESOURCE CONSERVATION COUNCIL

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FS Response

SEACC-1 The Purpose and Need section in Chapter 1 does not infer that the TLRMP is making any site-specific decisions.

The 5-Year Timber Sale Schedule was developed in March 1997 and was displayed in the Draft EIS Appendix A. It is updated annually.

Refer to the Other Issues section, Small Timber Sales portion of Chapter 1.

SEACC-2 All of the assumptions that were a part of the land management planning modeling process are located in the 1997 TLRMP Final EIS, Appendix B, Modeling and Analysis Process.

I. THE PURPOSE AND NEED STATEMENT VIOLATES THE NATIONAL FOREST MANAGEMENT ACT (NFMA) THE NATIONAL ENVIRONMENTAL POLICY ACT (NEPA), AND THE TONGASS TIMBER REFORM ACT (TTTRA).

A. The Purpose and Need Statement Improperly Relies on TLMP to Restrict the Range of Alternatives in violation of NEPA.

The DEIS states that the Purpose and Need for the proposed project is:

"to respond to the goals and objectives identified for the Project Area by the Tongass Land and Resource Management Plan ..., and to move the Project Area toward the desired condition described in TLMP."

SEACC-1

DEIS at I-3. According to TLMP, however, "the revised Forest Plan does not make site-specific decisions" Revised TLMP, FEIS, App. L at L-150. TLMP is a permissive document and doesn't mandate that certain activities occur. For example, TLMP did not include a 10-year schedule as required by NFMA. See 36 CFR § 219.10(e). Ironically, while the revised Tongass Plan failed to provide a 10-year schedule, Appendix A includes a 5-year sale schedule of the Tongass timber sale program. The Forest Service needs to reveal when and how this 5-year schedule was developed. Furthermore, TLMP does not direct the Forest Service to allow logging of 24-36 mmbf from the Indian River Project Area. The Forest Service could just as well plan smaller scale alternatives providing for local small-scale high-value added wood products manufacturing. It is obvious that timber targets are driving this timber sale. By relying on TLMP to justify a narrow, out-come oriented range of alternatives, the Purpose and Need statement violates NEPA.

B. The DEIS's Discussion of "Timber Growth and Productivity" Lacks Any Basis For Its

The DEIS states that:

"[h]arvesting aging stands, including those in declining health, on lands that allow timber harvest and replacing them with faster growing, healthy stands will reduce the volume loss associated with decay and disease and increase the growth and yield of the managed forest land."

SEACC-2

DEIS at I-3. While this statement may be true, it fails to consider whether such practices are in the best interest of the public. Clearcutting old-growth forests to convert them into younger stands "for the production of sawtimber and other wood products on an even-flow, long-term sustained yield basis" only makes sense if these younger stands will be marketable by the next rotation. Please disclose the basis for the assumption that second growth timber can be economically managed in the future. Under current plans to manage the Tongass under a 100-year rotation, economic studies show that logging of second-growth stands will be completely uneconomic. See Randall O'Toole, Review of the Final Tongass Forest Plan Revision at I7-22, (attached).

The Forest Service also must clarify what information it has to substantiate the following claim, also found in this section of the DEIS:

SEACC's Comments on Indian River DEIS

SEACC-3

SEACC-3 (cont.)

"Harvesting existing stands of western hemlock can encourage the growth of Sitka spruce and yellowcedar [sic.], creating a more diverse species mix and minimizing losses due to insects and diseases that are site-specific."

DEIS at 1-3.4. As the Forest Service knows, Alaska yellow cedar (AYC) is in decline in Southeast Alaska. See *The Paper*, "Mystery Shrouds the Forest", June 21, 1996(attached). Theories differ on why this phenomenon is occurring, but some think that it may be related to climatic changes and the fact the AYC is at the end of its ecological range in Southeast Alaska. Therefore, one has to be skeptical of claims that yellow cedar will regenerate after clearcutting in the Indian River area (near the northern end of its range). Instead, the Forest Service should consider how clearcutting will affect the diversity of natural plant communities in the project area. The Forest Service also must defend its claims that clearcutting favors spruce regeneration. Local knowledge submits that clearcutting in Tenakee Inlet also results in regeneration of hemlock and alder

C. The DEIS's Discussion of Market Demand Violates the TTRA and NEPA.

1. The DEIS misrepresents the Brooks and Haynes Report, violating NEPA.

In its discussion of market demand for Tongass timber, the Forest Service continues to misrepresent the findings of its own economists. Referring to a credible in-house report performed by Forest Service economists (D. Brooks and R. Haynes, Timber Products Output and Timber Harvests in Alaska: Projections for 1997-2010, September 1997), the DEIS erroneously states that "Projected annual sawlog demand for the next decade is 113 million board feet (mmbf) for the low scenario, 133 mmbf for the medium, and 156 mmbf for the high scenario." DEIS at 1-4. For all scenarios, however, the Brooks and Haynes report calculated total market demand: "[t]hese figures refer to total National Forest Harvest, including both net sawlog and utility volume." Brooks and Haynes at 3 (emphasis added). Furthermore, Brooks and Haynes estimated annual market demand for Tongass timber over five-year intervals, not over decadal periods. For the period from 1998-2002, the economists estimated market demand for Tongass timber to be 96 mmbf under the low scenario, 113 mmbf under the medium scenario, and 130 mmbf under the high scenario. *Id.* at 6. The Forest Service has a duty to insure that information presented in the DEIS is accurate and of high quality. This misrepresentation of the Brooks and Haynes study therefore violates NEPA. See 40 C.F.R. § 1500.1(b)

2. The DEIS proposes logging in excess of market demand, in violation of TTRA.

Section 101 of the Tongass Timber Reform Act states:

Subject to appropriations, NFMA, other applicable law, and the requirements of the National Forest Management Act ... the Secretary shall, to the extent consistent with providing for the multiple use and sustained yield of all renewable forest resources, seek to provide a supply of timber from the Tongass National Forest which (1) meets the annual market demand for timber from such forest, and (2) meets the market demand from such forest for each planning cycle.

SEACC's Comments on
Indian River DEIS

3

FS Response

SEACC-3 Refer to the 1997 TLRMP Final EIS, Effects of Regeneration Harvest Methods to the Timber Resource, pages 3-268 and 3-269.

Comment noted.

SEACC-4 The word "sawlog" in the sentence quoted has been corrected to say "timber volume."

The timber volume market demand figures displayed in the EIS Purpose and Need section in Chapter 1 are from the 1999 ROD, page 25.

SEACC-5 (cont.)

16 U.S.C. 539d(a). According to Appendix A of the DEIS, Forest Service plans to offer timber from the Indian River Project from between FY 99 and FY 02. DEIS at A-8. As stated above, expected annual market demand for this time period ranges from 96 mmmbf to 130 mmmbf. During this same time period, however, the Forest Service plans to offer an average of 225 mmmbf per year, about double the median expected demand for Tongass Timber. DEIS at A-12. As part of the total Tongass timber sale program, the Indian River Project contributes timber in excess of market demand. At the same time, the DEIS admits that the timber sale will have cumulatively significant effects on subsistence uses, in violation of Title VIII of ANILCA. Therefore, since the proposed sale fails to provide for healthy populations of deer from the project area for subsistence and sport uses and provides timber far in excess of market demand, the Forest Service is violating TTRA.

3. The argument to supply a 3-year supply of timber lacks a reasonable basis and violates Section 101 of TTRA.

On page 1-4, the DEIS states:

"The Forest Service intent is to provide the opportunity for the timber industry as a whole to acquire a supply of purchased, but yet unharvested timber equal to about three years of timber consumption."

After passage of the TTRA, the Forest Service concluded that "it is desirable to have 2 1/2 to 3 years of timber available for harvest at the beginning of each fiscal year...to remove uncertainty from the National Forest timber supply in Southeast Alaska." See letter from George Leonard to Sen. Stevens, April 23, 1991 (attached). This was a policy decision reached outside the public process, apparently made in response to pressure from Sen. Ted Stevens. See letter from Sen. Ted Stevens to George Leonard, April 16, 1991 (attached). This policy decision has no legal basis, was made at a time in which the Tongass timber industry is vastly different than the one we have today, and is not supported by available facts. Seven months prior to the above correspondence, statements from timber industry representatives show that the industry did not need a 3-year supply of timber. Ketchikan Pulp Company's Timber Division Manager, O.J. Graham, stated that KPC "realistically need[ed] to maintain a minimum of 12 months of timber released ahead for road construction and six months of timber roaded ahead for logging." See letter from O.J. Graham to Michael Lunn, September 21, 1990 (attached).

By striving to provide a 3-year timber supply to the timber industry, the Forest Service is providing timber far in excess of market demand and therefore violates Section 101 of the TTRA. Furthermore, it is apparent that the Forest Service has already supplied the timber industry with a more than a 3-year supply of timber. Considering the 300 mmmbf allocated to KPC with the 204 mmmbf currently under contract to independent operators, the Forest Service has already supplied the timber industry with five times the estimated annual demand for Tongass timber. DEIS at 1-4. When Brooks and Haynes calculated projected annual demand for Tongass timber, they did not distinguish timber processed by KPC under the 3-year agreement with the federal government. The Brooks and Haynes study was developed by SEACC's Comments on Indian River DEIS

4

FS Response

SEACC-5 Refer to Response SEACC-4. Also, some of the volume numbers in Appendix A have been updated to reflect a more current market demand situation.

The Subsistence section in Chapter 4 actually says, "there is a significant possibility of a significant restriction." The EIS does not say that the timber sale will have cumulatively significant effects on subsistence uses.

The Project Area provides habitat for healthy populations of deer for subsistence and sport uses, albeit with a significant possibility of a significant restriction of subsistence uses. If restrictions become necessary, they will, of course, apply first to sport users before subsistence users.

The analysis in Appendix A demonstrates that this project does not provide timber far in excess of market demand.

SEACC-6 The Code of Federal Regulations (CFR) cited here says, "Agencies shall insure the professional integrity, including scientific integrity, of the discussions and analyses in environmental impact statements. They shall identify any methodologies used and shall make explicit reference by footnote to the scientific and other sources relied upon for conclusions in the statement. An agency may place discussion of methodology in an appendix." This Draft EIS is tied to the 1997 TLRMP EIS which includes the Kathleen Morse (1998) report. Her report underwent extensive evaluation at that time. We used the information generated in the report in this document because it was the best available information.

using a trend-based analysis "in which the outlook for consumption underlies projections of forest products production and timber harvests in Alaska." Brooks and Haynes at 2. Using such a macro-economic approach, there is no way to separate KPC's production from that of other wood products manufacturers in the region. By considering KPC's timber supply separately from the independent program, the DEIS therefore misinterprets the Brooks and Haynes study, in violation of NEPA. See 40 C.F.R. § 1502.24.

4. In the near-term, the Forest Service should consider Brooks and Haynes low scenario as the most likely estimate of market demand for Tongass timber.

In all drafts of their analysis, Brooks and Haynes chose not to describe any of these alternate scenarios as most likely, however, the authors did include the statement: "a scenario in which the derived demand for Tongass timber falls to 70 million board feet is quite plausible." Brooks and Haynes May 26, 1997 draft at 12. While this statement is conspicuously absent from the final document, several references in the final document support the same general idea.

Due to past market trends, expectation of continued high logging and manufacturing costs, and weaknesses in Japanese markets, the authors suggest that the low scenario is the most likely to occur.

The 'low' scenario is predicated on the assumption that markets for Alaska wood will improve: "[I]n the low scenario, Alaska was assumed to recover some of the markets lost to other producers; the recent trends in production and market share for Alaska are reversed but only to a limited extent." Brooks and Haynes at ii. Given past trends, however, assuming any gains in market share for Alaska wood is optimistic: "Alaska's lumber production and market shares nevertheless have decreased steadily for more than 20 years, suggesting that the disadvantages may outweigh any advantage resulting from the value of Alaska's raw material." *Id.* at 7. "[A]ny gain [in market share] will be a reversal of trends observed over the past 20 years." *Id.*

In forming the 'low' scenario, Brooks and Haynes assumed that higher costs limit Alaska's share of markets. The authors give no indication that these higher costs will disappear in the future:

"Historically, harvesting and manufacturing costs in Alaska were 30 to 50 percent higher than those in the Pacific Northwest. In addition to increases in harvesting costs resulting from changes in management practices, competition for timber and the elimination of long-term timber sales have increased wood costs for Alaska mills."

Brooks and Haynes at 9.

Thus, it seems likely that logging and manufacturing costs will continue to increase in Southeast Alaska, because higher cost disadvantages will not disappear. See O'Toole, Review of Tongass Forest Plan Assumptions about Timber Receipts and Costs, (Oak Grove, OR: The Thoreau Institute, Nov. 14, 1997) (attached)

Finally, recent changes in Japanese markets make the 'low' scenario even more likely. The Japanese economy has lately been in a prolonged recession. Housing starts have spiraled down

SEACC's Comments on
Indian River DEIS

5

FS Response

SEACC-7 Since this Draft EIS was printed, new sawmills in Ketchikan and Wrangell have started operations, and a new veneer plant is scheduled to begin operations in Ketchikan. Appendix A has been updated to reflect current market conditions.

FS Response

SEACC-8 NEPA requires agencies to consider all reasonable alternatives. A reasonable alternative is one that, among other things, meets the purpose and need for the project. NEPA provides the agency with the authority to set reasonable objectives for the project. The reasonable objectives for this project focused on timber management activities, not on other means of resource development. The alternatives for this project were developed from the issues and concerns raised during the public scoping period after the Notice of Intent to prepare an EIS was published in the Federal Register (November 1995).

SEACC-9 Refer to Response SEACC-8 and the Other Issues section, Small Timber Sales portion in Chapter 1.

SEACC-10 Refer to the second paragraph of Response TK-1.

SEACC-11 "Production of alternative forest products" was not raised as an issue, does not meet the purpose and need for the project, and therefore, would not be an alternative considered.

SEACC-12 The subsistence analysis in Chapter 4 determined that there is a significant possibility of a significant restriction on subsistence uses in the no action alternative as well as the action alternatives. Also, restrictions may be due to forces outside human control, such as weather. It is not possible to formulate an alternative which eliminates this possibility. See the Subsistence section in Chapter 4 for effects to subsistence resources.

from last year's levels. "Housing starts in September were down 22.2 percent from the same month in 1996 - the ninth consecutive month down." See Hoshi, "Japan Market Report," *Pacific Rim Wood Market Report*, at 4 (Nov. 1997)(attached); see also "Japan: Change Ahead," *Pacific Rim Wood Market Report* at 1 (Oct. 1997)(attached). Brooks and Haynes state the importance of Japanese markets for the Alaska timber industry. "[t]his sensitivity analysis shows model results to be most sensitive to relatively small changes in Alaska's share of North American shipment of softwood lumber to Japan." Brooks and Haynes at iii. Furthermore, when discussing the state of Japanese markets, the authors admit that "[f]actors that may make our medium projection too optimistic include further weakening of the Japanese market for hemlock and even greater acceptance of engineered wood products." *Id.* at 15.

Finally, there is no end in sight for Japan's economic woes. See "The Yen: Down She Goes (Again)," *The Economist* (Nov 15, 1997)(attached). Japan's demand for Alaskan wood products will likely remain reduced in the future. Therefore, there is additional reason to consider the 'low' scenario as the most likely scenario, at least in the near term. While some argue that market conditions will improve in 2-3 years, such statements are mere speculation and ignore market trends over the last 20 years.

II. THE DEIS FAILS TO CONSIDER A REASONABLE RANGE OF ALTERNATIVES AND THEREFORE VIOLATES NEPA.

With recent events in Southeast Alaska, it is no longer necessary to extract large amounts of timber from Tenakee Inlet to ship to mills in distant communities. The Forest Service finally has the chance to manage Tenakee Inlet for the long-term benefit of local residents who are most dependent on its resources. Sadly, this opportunity is being missed, since all action alternatives focus on large-scale logging and roadbuilding and propose logging between 24 and 36 million board feet. The Forest Service simply fails to provide "a clear basis for choice among options by the decisionmaker and the public." See 40 C.F.R. § 1502.14. By failing to consider smaller-scale alternatives and alternatives which focus on other means of resource development, the Forest Service has failed to consider a reasonable range of alternatives.

Some alternatives which the Forest Service should consider include:

- ◊ an alternative limited to the existing road system (i.e. no "new" roadbuilding) to offer small sales for local use and manufacture of finished wood products.
- ◊ an alternative which designates all or a portion of the Project Area as a "community development reserve" to be managed by local residents and the Forest Service in the spirit of "collaborative stewardship" for the long-term production of old-growth quality wood used for local manufacture of finished wood products.
- ◊ an alternative which focuses on the production of alternative forest products, such as berries, medicinals, mushrooms, mosses, etc.
- ◊ an alternative which doesn't significantly impact subsistence resources.

SEACC's Comments on Indian River DEIS

SEACC-7
(cont.)

SEACC-8

SEACC-9

SEACC-10

SEACC-11

SEACC-12

SEACC-13

- ◊ an alternative which relies solely on selection logging methods instead of clearcutting or pseudo-clearcutting methods.

The CEQ regulations direct that an EIS "shall provide full and fair discussion of significant environmental impacts..." 40 C.F.R. § 1502.1. By limiting its analysis to a narrow range of alternatives, the Forest Service is unable to provide such a full and fair discussion of the costs and benefits of various reasonable alternatives. Without fully considering the alternatives listed above and evaluating their costs and benefits, the DEIS lacks a reasonable basis for its conclusions that clearcutting large volumes of timber from this project at the expense of other resources is economically beneficial.

SEACC-14

III. THE DEIS FAILS TO FOLLOW THE DIRECTION OF THE REVISED FOREST PLAN ROD REGARDING "COLLABORATIVE STEWARDSHIP."

In signing the revised Forest Plan ROD, Regional Forester Phil Janik stated that, as part of Forest Plan implementation,

"the Forest Supervisors and District Rangers will increase their efforts in collaborative stewardship within the communities of Southeast Alaska. Collaborative stewardship means bringing people together to share in the decision making in implementing Forest Plan direction."

Revised Forest Plan ROD at 42. Unfortunately, this new Forest Service effort has not arrived on the shores of Tenakee Inlet. Basic to any attempts at collaborative stewardship is clear and open communication. Even though local residents requested postponing the 810 hearing on the DEIS, the Forest Service insisted on holding the hearing only a few days after the arrival of the DEIS in Tenakee Springs. It took an official request on behalf of the City of Tenakee Springs with the backing of CEQ regulations to have the Forest Service reschedule the hearing. See letter from Shelley Wilson, Vice President Tenakee Springs City Council, Dec. 4, 1997(attached). With more advance communication and flexibility in the spirit of collaborative stewardship, such a confrontational resolution would have been unnecessary. Ignoring repeated requests by the City of Tenakee Springs and its residents to establish a "community development reserve" in the Project Area also violates the spirit of "collaborative stewardship."

SEACC-15

Refer to the second paragraph of Response TK-1.

SEACC-16 The Memorandum of Understanding Between the City of Tenakee Springs and the USDA Forest Service for the Short-term Use of Tenakee Springs' Tidelands at Sunny Cove and accompanying Resolution 97-11 and Ordinance 97-06 has been added to the appendices. Additional information regarding the MOU has been added to the Issue Area 4 section in Chapter 2.

SEACC-16

"For the duration of the MOU, the Forest Service agrees that it will not, directly or indirectly, develop or use, or permit the development or use, of alternative log transfer

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FS Response

SEACC-13 "Alternatives to Traditional Clearcutting" was an issue that was identified in Chapter 1, that was addressed in the Alternatives Considered in Detail and Comparison of Alternatives by Identified Issue sections in Chapter 2, and the effects analyzed in Chapter 4.

SEACC-14 Refer to Responses SEACC-8 through SEACC-13.

SEACC-15 Refer to Response ADF&G-6.

The open house and subsistence hearing originally scheduled for December 9, 1997 was postponed until January 6, 1998 based on two telephone requests and the letter referred to in the comment. Due to inclement weather, this later meeting was postponed to January 13, 1998.

Refer to the second paragraph of Response TK-1.

SEACC-16 The Memorandum of Understanding Between the City of Tenakee Springs and the USDA Forest Service for the Short-term Use of Tenakee Springs' Tidelands at Sunny Cove and accompanying Resolution 97-11 and Ordinance 97-06 has been added to the appendices. Additional information regarding the MOU has been added to the Issue Area 4 section in Chapter 2.

SEACC-16
(cont.)

facility sites in connection with the Indian River Project, including but not limited to sites at 10-Mile Creek, or at other locations in Sunny Cove."

MOU at 3. The Forest Service must explain why this part of the MOU never appeared in the DEIS. When discussing any alternative that uses alternative LTF sites, the Forest Service must acknowledge the existence MOU and disclose that the alternative is inconsistent with the terms of the MOU. See 40 C.F.R. § 1502.16(c).

IV. ALL ALTERNATIVES WHICH AUTHORIZE THE CONSTRUCTION OF NEW PERMANENT ROADS ARE ILLEGAL BECAUSE THE FOREST SERVICE LACKS A FOREST DEVELOPMENT ROAD SYSTEM PLAN FOR THE TONGASS.

All of the action alternatives in the DEIS require the construction of between 7.8 and 9.7 miles of additional permanent roads in the project area. Such roadbuilding plans are illegal and inconsistent with national and regional management direction. See SEACC's Appeal of Revised Forest Plan at 78 (attached).

Therefore, in order to consider at least one alternative which meets all the requirements of law, the Forest Service should craft an alternative which doesn't build any new permanent roads. If the construction of permanent roads is necessary, then future development along the road system is reasonably foreseeable and the impacts from such development must be addressed in this EIS.

Existing roads in the Project Area have already degraded fish habitat and water quality. The Forest Service should not build any new roads in the Project Area until it can show that water quality and fish habitat will not be affected. According to the Indian River Watershed Analysis (IRWA), a total of 11 drainage structures in the Project Area act as barriers to fish passage. The IRWA notes that one culvert near the mouth of a major tributary to Indian River is completely blocking fish passage to 400 meters if Class I habitat. IRWA at 87. The IRWA also notes that "Ten Mile Creek has large natural sediment sources and is potentially the most susceptible to increased erosion from future management activity." IRWA at 80. To comply with NFMA, the Forest Service must show that its management plans will not adversely affect fish habitat:

"No management practices causing detrimental changes in water temperatures or chemical composition, blockages of water courses or deposits of sediment shall be permitted in these areas which seriously affect water conditions or fish habitat."

36 C.F.R. § 219.27(e)

V. ANY EXTENSION OF THE INDIAN RIVER ROAD SYSTEM IN THE DIRECTION OF THE GAME CREEK ROAD IS A DIRECT VIOLATION OF SECTION 106 OF THE TONGASS TIMBER REFORM ACT (TTRA).

Section 106 of the TTRA, P.L. 101-206, states that the Forest Service:

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FS Response

SEACC-17 Consideration of the commenting organization's appeal of the 1997 TLRMP EIS is outside the scope of this project-specific EIS and was addressed in the 1999 TLRMP Record of Decision (1999 ROD).

SEACC-18 See the Fish and Fish Habitat section in Chapter 4 for information regarding effects to fish habitat. Also, the sites referred to in the comment were repaired, along with other maintenance needs within the Project Area, in fiscal years 1998 and 1999 with "10 percent roads" funds.

SEACC-18**SEACC-19**

FS Response

SEACC-19 Refer to Response ADF&G-9.

"[S]hall not construct a vehicular access road connecting the Indian River and Game Creek roads, **and shall not engage in any further efforts to connect the City of Tenakee Springs with the logging road system on Chichagof Island**, unless the city councils of Tenakee Springs and Hoonah both determine that the road should be constructed and so inform the Secretary [of Agriculture]." (emphasis added)

Referring to this section of TTRA, Congressman George Miller stated that:

"The need for Congress to intervene in this matter illustrates the Forest Service's insensitivity to the desires of small communities in Southeast Alaska."

136 Cong. Rec. H12834 (daily ed. Oct. 26, 1990). Sadly, the Forest Service's insensitivity continues seven years after this act became law. As of this date, neither the Tenakee Springs City Council or the Hoonah City Council has voted in favor of a road connecting the two communities. In fact, the City Council of Tenakee Springs recently passed resolution 98-15, in which they object to the proposed Indian River road connection. See City of Tenakee Springs, Resolution 98-15. Given the fact that the Forest Service has failed to disclose its long-term transportation plans for Tenakee Inlet given the termination of the APC contract, the public must assume that any extension of the Indian River road system could be further extended in future Forest Service projects. Since all action alternatives would extend Indian River's permanent road network in the direction of the Game Creek road, all action alternatives constitute further efforts to connect the City of Tenakee Springs with the logging road system on Chichagof Island. Designed without prior consent from the City Councils of both Hoonah and Tenakee Springs, all action alternatives therefore violate Section 106 of the TTRA.

Judging from the project maps, all action alternatives except Alternative E would result in a ¾ mile gap between the Indian River and Game Creek road systems, (Alternative E would result in a 1 ¼ mile gap). Looking at Forest Service aerial photos of the area, it appears that the ¾ gap consists of gentle terrain with no ravines blocking ATV access. After the sale is completed under any of these alternatives, it appears that ATV users would be able to drive their vehicles from Tenakee Springs all the way to the community of Hoonah and vice-versa. Such a de facto ATV connection would constitute a "vehicular access road," which is explicitly prohibited by the TTRA

Therefore, in order to comply with section 106 of the TTRA, the Forest Service must delete all proposed extensions of the Indian River road system in all action alternatives. If the Forest Service wants to include units from this area in its alternatives, the only legal means of accessing this timber would be using the existing road system and helicopter transfer.

VI. THE DEIS FAILS TO FULLY DISCLOSE AND EVALUATE CUMULATIVE EFFECTS OF PAST, PRESENT, AND REASONABLY FORESEEABLE TIMBER SALES IN TENAKEE INLET VIOLATING NEPA.

The Forest Service is currently planning another timber sale in Tenakee Inlet, the Finger Mountain Timber Sale in Crab Bay. According to the timber sale schedule in Appendix A, offerings from both timber sales could be logged simultaneously. The CEQ regulations require that

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SEACC-19 (cont.)

SEACC-20

SEACC-20
(cont.)

"[c]umulative actions, which when viewed with other proposed actions have cumulatively significant impacts" must be considered in a single EIS. See 40 C.F.R. § 1508.25(a)(2). The Forest Service must fully disclose and evaluate the direct, indirect, and cumulative effects of these cumulative actions, including impacts on subsistence and sport hunting, commercial fishing, tourism, recreation, and community values in this DEIS. What impacts are associated with having multiple logging camps in Tenakee Inlet? What impacts on commercial fishing will the operation of multiple log storage and rafting areas create? How will traffic and noise created by the combined logging activities affect tourism and recreation businesses which depend on the relative isolation of Tenakee Inlet? What impacts on subsistence resources will competition from residents of multiple logging camps create?

Besides the Finger Mountain Timber Sale, the Forest Service must also evaluate the cumulative effects of all past, present and reasonably foreseeable timber sales in Tenakee Inlet. According to Appendix A of the DEIS, "[a]ll areas in which commercial timber harvest is authorized under the new TLMP are expected to receive some level of timber harvest at some time if the Forest Plan is to be fully implemented." DEIS at A-15. With this assumption, one must expect that other areas of Tenakee Inlet, including Seal Bay, Long Bay, and Goose Flats will be logged in the future. The Forest Service must disclose and evaluate all cumulative effects associated with these reasonably foreseeable timber sales.

CEO regulations also require the Forest Service to consider "connected actions" in a single EIS. See 40 C.F.R. § 1508.25(a)(1). With the projected sale of timber from the Indian River and Finger Mountain projects occurring during the same time period, is the Forest Service planning to sell these sales to the same buyer? How do mobilization costs affect the economic viability of these two sales? If the only way for an operator to consider mobilizing a camp in Tenakee Inlet requires that both sales be offered during the same time period, then they "[a]re interdependent parts of a larger action and depend on the larger action for their justification," constituting "connected actions" and must be considered in a single EIS. *Id.*

VII. THE DEIS DEMONSTRATES THE PROBLEM INHERENT WITH THE NEW 2-STEP PLANNING PROCESS ADOPTED IN THE REVISED TONGASS PLAN FOR MAKING MANAGEMENT DECISIONS

The Revised Tongass Plan substantially hampers the public's right to know, understand and participate in decisions affecting their public lands by dropping the requirement for a mid-level planning stage. The "two-step" planning process adopted for the Tongass is unworkable. It moves from the macro level (a 17 million acre forest) to the micro level (individual mining plans, roads, timber sales, and commercial recreation permits) without an intermediate step. This practice will cripple the Forest Service's ability to conduct a credible cumulative impact analysis. Without conducting public planning at some intermediate geographic scale, such as Tenakee Inlet, the public's ability to understand and meaningfully participate in planning for the sustainable use of lands and resources important to the long-term stability of their community is impaired.

The DEIS for the Indian River Timber Sale demonstrates the principal reason why the two-step process won't work on the Tongass -- the Forest Service is unwilling to fully comply with the

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FS Response

SEACC-20 The Cumulative Effects portion of the Overview section at the beginning of Chapter 4 has been edited to include the Finger Mountain Timber Sale Project.

The Upper Tenakee Timber Sale area was changed from a development LUD to a non-development LUD in the 1999 TLRMP Record of Decision (1999 ROD).

SEACC-21 The Forest Service is not planning to sell any Indian River and Finger Mountain Timber Sales to the same buyer. Timber sales will be put up for bid independent from all other sales to all qualified bidders.

Connected actions are closely related actions which automatically trigger other actions, cannot proceed unless other actions are taken previously or simultaneously, or are interdependent parts of a larger action and depend on the larger action for justification [40 CFR 1508.25(a)(2)]. The Forest Service is not requiring that timber sales from the Indian River and Finger Mountain Timber Sale Project Areas be sold to the same buyer as the comment suggests, does not meet the criteria in the CFR, therefore there is no connected action.

SEACC-22

SEACC-22 (cont.)

letter and spirit of NEPA. Instead of fully integrating the NEPA process in the early stages of development in this special area, the Forest Service's approach to encouraging and facilitating public participation in the NEPA process is to issue project-level decisions in a piecemeal fashion, one project at a time.

Rather than using the NEPA process for the Indian River Timber Sale to collect and analyze important resource inventories for the entire Tenakee Inlet area, the Forest Service stayed focused on just a single piece of this ecological puzzle. The Forest Service thereby violated NEPA by failing to "initiate and utilize ecological information in the planning and development of resource-oriented projects." See 42 U.S.C. § 4332(2)(H). In order to fulfill its responsibility as "trustee of the environment for succeeding generations," 42 U.S.C. § 4331(b)(1), the Forest Service was obliged to collect and analyze comprehensive and accurate resource inventories for the entire Tenakee Inlet area, which is almost entirely under Forest Service jurisdiction. This was not done. Such leadership would have fulfilled the Forest Service's responsibility under NEPA to encourage and facilitate informed agency and public review of the Indian River Timber Sale and other actual proposed projects that will have cumulatively significant impacts on the quality of the environment in Tenakee Inlet.

VIII. ALL ALTERNATIVES RELY HEAVILY ON CLEARCUTTING, VIOLATING NFMA PROVISIONS LIMITING THE USE OF CLEARCUTTING

While some of the action alternatives propose more selective cutting than others, all alternatives rely on clearcutting with retention as the main logging method. From alternative B, in which 66% of the timber volume comes from clearcuts to Alternative E, in which 82% of the timber volume comes from clearcuts, all alternatives rely on clearcutting to produce the majority of timber volume in each alternative. The Forest Service continues to emphasize clearcutting in its timber sales, even though its own analysis shows that clearcutting causes significant damage to fish and wildlife, water, soil and watershed, subsistence, recreation and aesthetic resources and that much of that damage could be prevented by using natural selection methods which mimic the dominant natural patterns of disturbance on the Tongass

Passage of the National Forest Management Act by Congress in 1976 was motivated in significant part by the public's concern over the devastating impacts of clearcutting on the National Forest System. Wilkinson and Anderson 41,155 (1985). See also *Sierra Club v. Thomas*, 105 F.3d 248, 249 (6th Cir. 1997) ("The National Forest Management Act was enacted as a direct result of Congressional concern for Forest Service clearcutting practices and the dominant role timber production has historically played in Forest Service policies"). Though Congress did not prohibit clearcutting outright on national forests, it did impose stringent limitations on its use.

Two of the most important limitations of the NFMA are that clearcutting can be used only where (1) "it is determined to be the optimum method ... to meet the objectives and requirements of the relevant land management plan;" and (2) "such cuts are carried out in a manner consistent with the protection of soil, watershed, fish, wildlife, recreation, and esthetic resources, and the regeneration of the timber resource." 16 U.S.C. §1604(g)(3)(F); see also 36 C.F.R. §219.27(b)(1) (logging methods shall be "best suited" to the multiple-use goals established for the area, considering environmental, biological and other impacts); §219.27(c)(6) (even-aged logging

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FS Response

SEACC-22 Refer to Response ADF&G-27.

SEACC-23 Whether or not the modified 1997 Forest Plan meets the limitations on the use of clearcutting is outside the scope of this project specific EIS.

All of the harvest methods, including the clearcut with retention harvest method, were considered in the interdisciplinary team process and prescribed by a certified silviculturist to meet all legal and forest management direction.

SEACC-23
(cont.)

methods "shall be carried out in a manner consistent with the protection of soil, watershed, fish and wildlife, recreation, and aesthetic resources, and the regeneration of the timber resource.""). These provisions have recently been interpreted and applied as "extensive limitations" on the use of clearcutting. *Sierra Club v. Thomas*, 105 F.3d at 250. Neither of these important limitations on the use of clearcutting are met by the revised Forest Plan or the Indian River DEIS. Since clearcutting is not the optimum logging method for protection of wildlife values, subsistence resources, recreation, tourism and aesthetics, water quality, watersheds, and fish, reliance on clearcutting by the Forest Service in this DEIS violates NFMA. See SEACC's Appeal of the Revised Tongass Plan at 11-26 (attached).

IX. THE INDIAN RIVER WATERSHED ANALYSIS FAILS TO FULLY RESPOND TO THE RECOMMENDATIONS OF THE ANADROMOUS FISH HABITAT ASSESSMENT REPORT (AFHA) AND VIOLATES NEPA.

One of the most important recommendations of the AFHA report was that the Forest Service should perform a cumulative watershed effects analysis before project level planning begins. See SEACC's Appeal of the revised Tongass Plan at 118 (attached). While the Forest Service has taken some steps to perform a watershed analysis on the project area, its analysis is deficient and must be reworked.

In its discussion of streamflow, the IRWA attempts to downplay the significance of studies on the effects of clearcutting on streamflow, calling the Myren and Ellis study "speculative." The Forest Service lacks any basis for this claim, however, and the data it uses to support its argument is inconclusive. In discussing watershed disturbance / second-growth, a recent draft handbook for conducting watershed analysis explains that "[r]emoving timber can result in elevated peak flows, depressed low flows, increase in groundwater tables, and other hydrologic effects. USDA, Alaska Region *Watershed Analysis Handbook* at 25. Decreased low flows result from higher evapotranspiration rate caused by the conversion of old-growth timber stands to vigorously growing second-growth vegetation. Such effects are only visible after second-growth is well-established. While logging occurred in the Indian River drainage from 1979 to 1986, complete streamflow data was only collected between 1976 and 1982. Data from 1995 in the IRWA is meaningless since it only reveals mean flow. Thus without data showing the long-term effects from clearcutting on Indian River flows, the Forest Service is unable to claim that it has any evidence to back up its claim: "we discount the possibility of measurable low flow changes in Indian River resulting from timber management activities." IRWA at 46.

The Forest Service needs to go back and rework its watershed analysis to fully evaluate potential effects on streamflow from clearcutting. The Forest Service could gather such information using data supplied by the US Geologic Survey. The USGS has collected sufficient raw flow data on some Tongass streams such as Stanley Creek to evaluate the long-term effects of clearcutting on fish and watershed resources. See SEACC's Appeal of the Revised Tongass Plan at 144 (attached). Without such an analysis, the Forest Service is failing to assure that public that its management practices will not "seriously and adversely affect water conditions or fish habitat." 36 C.F.R. § 219.27(e)

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SEACC-24

X. THE FOREST SERVICE'S ANALYSIS OF IMPACTS ON SUBSISTENCE RESOURCES IS INADEQUATE.

The Indian River Project Area is an important area for local subsistence deer hunters. According to the DEIS, "residents harvested 21 percent of their deer from WAAs 3525 and 3526." DEIS at 4-43. Due to the Indian River Timber Sale and other timber sales planned for Tenakee Springs subsistence use areas, the DEIS states that "[c]umulatively, there is a significant possibility of a significant restriction [of subsistence deer hunting] at some time in the future." *Id.* While the DEIS admits that the timber sale will significantly impact subsistence resources, it fails to show that the project is necessary, uses the minimum amount of public lands, and that reasonable steps were taken to minimize adverse impacts, in violation of Section 810 of ANILCA.

A. The DEIS Fails to Show That a Significant Restriction is "Necessary."

1. The DEIS mischaracterizes the intent of ANILCA and TTRA.

The DEIS attempts to downplay the extent to which ANILCA was meant to protect subsistence resources on the Tongass. To do this, the DEIS mentions that ANILCA mandated an ASQ of 450 mmmbf on the Tongass even though this part of the act has been repealed by Congress in 1990. Congress amended this part of ANILCA when it determined that the Forest Service could not provide 450 mmmbf per year from the Tongass without affecting subsistence and other renewable forest resources. The DEIS tries to downplay the intent of Congress by stating "The TTRA removed the 4.5 mmmbf [sic.] requirement from ANILCA but directed the Forest Service to seek to meet market demand and the market demand for the planning cycle." DEIS at 4-49. This statement improperly concludes that Section 101 of TTRA can make restrictions to subsistence necessary.

Market demand for timber is subordinate to multiple use principles under TTRA. Furthermore, section 810 of ANILCA gives subsistence a higher degree of protection than that afforded by multiple use principles. To use market demand for timber as a justification to restrict subsistence uses is to turn this statutory scheme on its head. If meeting market demand would lead to significant restrictions of subsistence uses, it is the timber sales, not the subsistence uses, that must give way. By preparing a timber sale which provides timber in excess of market demand while causing significant restrictions to subsistence uses, the Forest Service is elevating the market demand provision of TTRA over section 810's requirement to protect subsistence uses. Such planning efforts are contrary to law.

The DEIS ALSO violates NEPA by erroneously predicting that "[d]emand for timber from the Tongass National Forest is expected to remain high," in complete contradiction to the latest analysis of market demand by Brooks and Haynes. DEIS at 4-49.

2. The DEIS mischaracterizes the "permissive" nature of the Forest Plan

The DEIS claims that "[t]he action alternatives presented here encompass five different approaches that would produce the resources that would best meet the needs of the public and help achieve multiple use management objectives in the 1997 TLMP." DEIS at 4-49. This

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FS Response

SEACC-25 The EIS finds that a significant possibility of a significant restriction of some subsistence resources exists.

The project is necessary, as shown in the Necessary, Consistent with Sound Management of Public Lands part in the Determinations portion of the Subsistence section in Chapter 4. The minimum amount of public land was used, as shown in the Amount of Public Land Necessary to Accomplish the Purpose of the Proposed Action part in the Determinations portion of the Subsistence section in Chapter 4. Reasonable steps were taken to minimize adverse impacts, as shown in the Reasonable Steps to Minimize Adverse Impacts Upon Subsistence Uses and Resources part in the Determinations portion of the Subsistence section in Chapter 4.

SEACC-26 Refer to Response SEACC-25. The typographical error you pointed out has been corrected.

SEACC-27 Comment noted.

SEACC-28 The sentence referred to has been clarified.

SEACC-29
(cont.)

remark is purely a statement of opinion and has no basis in fact. The 1997 TLMP (Forest Plan) is entirely "permissive"; there is no determination or analysis in the Forest Plan that the Indian River Timber Sale is "necessary." The DEIS further states that "there is no alternative that would meet 1997 TLMP objectives and yet avoid a significant possibility of subsistence restrictions somewhere in the Forest." *Id.* However, since the Forest Plan is entirely "permissive," selecting the "no action" alternative would in fact meet 1997 TLMP objectives. Just because part of the Project Area has been placed in development LUDs under the new Forest Plan does not mean that the Forest Service must approve a timber sale at this time in the Project Area.

B. The DEIS "Minimal Public Lands" Finding is Contrary to Law.

Section 810 of ANILCA requires the Forest Service to show that "the proposed activity will involve the minimal amount of public lands necessary to accomplish the purposes of such use, occupancy, or other disposition" before it can restrict subsistence uses. In its effort to prove that a minimum amount of public lands will be used for the proposed action, the DEIS states that "[a] viable timber harvest project always includes alteration of old-growth habitat." DEIS at 4-50. What information is the Forest Service using to support this claim. This may have been true under the long-term contracts, when the Forest Service had to meet strict volume requirements. With today's new reality, however, the Forest Service lacks a reasonable basis for this claim. Recent experience with selective logging in Southeast Alaska shows that logging methods which have less impact on subsistence resources are possible. See *Juneau Empire*, "Goldbelt's selective logging at Echo Cove receives praise" (April 12, 1997)(attached). Since the DEIS failed to examine an alternative (besides the no action alternative) which did not significantly affect subsistence resources, it cannot find that a minimum amount of public lands is being involved.

SEACC-30

C. The DEIS Fails to Substantiate its Claim That "Reasonable Steps" Were Taken to Mitigate Impacts on Subsistence Resources.

Section 810 of ANILCA requires that "reasonable steps will be taken to minimize adverse impacts upon subsistence uses and resources resulting from such actions." 16 U.S.C. § 3120(a)(3)(C). In an attempt to comply with this order, the DEIS simply states that "[r]easonable steps to minimize impacts on subsistence have been incorporated in development of the alternatives and project design criteria." DEIS at 4-50. The DEIS, however, fails to outline which specific steps were taken. As stated above, the DEIS fails to consider an action alternative which doesn't significantly affect subsistence resources. Without considering such an alternative, the DEIS is unable to substantiate its claim that "reasonable steps" were taken. The DEIS then inappropriately refers to the ability of the Federal Subsistence Board to restrict other users to protect subsistence use. The Federal Subsistence Board's authority lies outside of the scope of this EIS and should not be considered as a basis for the Forest Service's finding. Section 810 directs the Forest Service to show that the Forest Service took reasonable steps to minimize adverse impacts on subsistence, not that some other agency will be able to mitigate impacts on subsistence users due to Forest Service actions.

SEACC-31

XI. THE DEIS FAILS TO FULLY DISCLOSE AND EVALUATE THE POTENTIAL IMPACTS ON BROWN BEAR POPULATIONS

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FS Response

SEACC-29 Refer to Response SEACC-25 and the Purpose and Need section in Chapter 1 of this EIS.

SEACC-30 All of the alternatives, including the no action alternative, present a significant possibility of a significant restriction of subsistence use. Also, refer to Response SEACC-25.

SEACC-31 Refer to Appendix C and Response SEACC-25.

SEACC-32

As discussed in SEACC's appeal of the revised Forest Plan, the Forest Plan is inadequate in maintaining viable and well distributed populations of brown bears. See SEACC's Appeal of the 1997 Revised Tongass Plan at 27-32 (attached). Two of the activities which present the greatest threat to brown bear populations are road construction and logging within riparian areas important to brown bears. The DEIS fails to fully disclose and evaluate the potential impacts on brown bears from these two management activities in the Indian River Project Area.

A. The DEIS Fails to Adequately Disclose and Evaluate Impacts Due to Road Construction.

All action alternatives propose between 7.8 and 9.7 miles of new permanent road construction. Roads constructed for timber sales increase human access to bear habitat and result in greater mortality to bears. Titus and Beier (1991) found a direct correlation between autumn brown bear kill and cumulative miles of road construction on northeastern Chichagof Island. Even after closure of hunting seasons, mortality continued on Chichagof Island because of defense of life and property kills and an unknown number of illegal kills. (Shoen et al. 1994). The DEIS attempts to downplay these concerns by claiming that "Project Area roads would not be linked to any community" and that "[h]unting mortalities should be low since current hunting regulations prohibit the use of motorized vehicles to hunt brown bear from the roads on Chichagof Island." DEIS at 4-24.

First, the project area already contains roads which lie within the boundaries of the City of Tenakee Springs. Many Tenakee Springs residents and visitors access the Indian River road system with ATVs due to its proximity to town. Furthermore, extending the road system to within ¼ mile of the Game Creek road system would provide a de facto connection for ATVs. The DEIS completely fails to address the potential impacts on brown bears due to ATV access from Hoonah and Tenakee Springs. The claim that hunting mortalities should be low completely ignores those studies which show that motorized hunting regulations have been inadequate in curbing brown bear mortality on Chichagof Island. (Shoen et al., 1994).

Concerned about the impacts of roadbuilding on brown bears, the 1996 TLMP brown bear risk assessment panel said that the Forest Service's "first priority" should be "to retain currently unroaded watersheds in a roadless condition." To meet these concerns, the Forest Service should at least consider an alternative which doesn't build any new roads in the headwaters of Freshwater Creek (road 75007) and extending towards the Game Creek road system (road 7500). The two areas are the last unroaded basins in the Project Area and provide important refugia for brown bears in the area.

B. The DEIS Fails To Fully Disclose and the Impacts of Logging in Important Brown Bear Feeding Areas.

ADF&G has expressed concerns over important brown bear foraging sites in the Project Area, including lower 10-Mile Creek, lower Indian River, and the intersection of road nos. 7500 and 7502. DEIS at 4-20. The 1996 and 1997 TLMP panel recommended a 500 ft default no logging, no roading buffer along anadromous streams important for brown bear foraging. Unfortunately, instead of assuming a 500 ft no logging, no roading buffer as the default, the Forest Plan assumes

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FS Response

SEACC-32 The 1997 TLRMP EIS and the 1999 TLRMP Record of Decision (1999 ROD) concluded that the decision "will provide the fish and wildlife habitat necessary to maintain well-distributed viable populations of vertebrate species in the (Tongass National Forest) and maintain the diversity of plants and animals" (1999 ROD, page 57).

Road construction and riparian area timber harvest impacts to brown bear habitat were considered in the Wildlife section in Chapter 4.

SEACC-33 Comment noted.

SEACC-34 Roads do not kill brown bears; rather, people accessing areas via roads, especially with motorized vehicles, kill brown bears. Although residents of Tenakee Springs and visitors access the Indian River road system with motorized vehicles, they are not hunting brown bears in violation of State game or Federal subsistence regulations. According to the ADF&G, one brown bear was harvested in a Project Area Minor Harvest Area from 1990 through 1997 (sport kill in 1997). There have been no recorded defense of life or property kills (DLP) or illegal kills during the same time frame within the Project Area.

Refer to Response SEACC-19.

The Northeast Chichagof Controlled Use Area (NECCUA) brown bear hunting restrictions have reduced brown bear mortality, from a high of 24 in 1988 (pre-NECCUA restrictions) to 10 in 1997 (9 sport kills and 1 DLP). If the organization commenting feels that additional changes in the brown bear hunting regulations are necessary, they should contact the Alaska Board of Game and Regional Subsistence Council to submit regulatory proposals.

SEACC-35 This recommendation by the brown bear risk assessment panel was not adopted as a Forest-wide standard and guideline in the 1997 TLRMP EIS. However, the Old-growth Strategy in Alternative 11, was adopted in the modified 1997 Forest Plan. This Alternative, "likely presents the highest likelihood of maintaining viable long-term brown bear populations due to the extensive reserve system that should significantly address the road issue that is adverse to bears. It also has strong riparian protection." (1997 TLRMP Final EIS, page 3-418).

SEACC-36
(cont.)

that important brown bear feeding sites will receive no additional protection unless the need is identified during project planning, and a 500 foot buffer is available. Forest Plan at 4-114.

As one of the few salmon-spawning areas on the north side of Tenakee Inlet, 10-Mile Creek provides essential brown bear feeding habitat. Telephone Conversation with Laverne Beier, ADF&G (Jan.20, 1998). It is essential, therefore, that the Forest Service take a conservative approach towards managing this area. In the DEIS, the Forest Service claims that "[h]arvest units along the lower reaches of 10-Mile Creek and near the intersection of Roads 7500 and 7502 either have sufficiently wide buffers or are more than 500 feet from fish streams." DEIS at 4-20. Looking at the unit cards contained in Appendix J, Units 21310, 21410 and 21511 all propose logging along the lower reaches of 10-Mile Creek within the 500 foot buffer recommended by scientists. The Forest Service must reveal what evidence it has to suggest that the buffers are sufficiently wide and that brown bears will not be affected. Otherwise, it must adopt the 500 foot no logging, no roading buffer recommended by scientists.

C. The Old-Growth Reserves in the Project Area are Inadequate to Maintain Viable and Well Distributed Populations of Brown Bears.

Brown bear research, including scientific studies and reviews conducted pertaining to the TLMF, acknowledges the value and importance of providing roadless refugia from humans. The Old-Growth reserves established by the Tongass Plan, however, fail to follow scientists' recommendations for designing these reserves. See SEACC's Appeal of the Revised Tongass Plan at 31 (attached). In order to provide important roadless refugia for brown bears in the project area, then, the Forest Service should use the ability to modify old-growth reserves granted by the Forest Plan at K-1. The old-growth reserve in VCU 2160 should be expanded to protect the roadless quality of both upper forks of Freshwater Creek to provide roadless refugia for brown bears.

SEACC-37

SEACC-37 Refer to Response SEACC-35.

The small old-growth reserve in VCU 2160 and other medium and large old-growth reserves in and near the Project Area meet the criteria in Appendix K in the modified 1997 Forest Plan (pages K-1 through K-2).

XII. THE DEIS FAILS TO EVALUATE REASONABLE MITIGATION MEASURES TO REDUCE IMPACTS ON SUBSISTENCE USE OF MARTEN POPULATIONS

The DEIS admits that the project will adversely affect marten populations. But any negative effects are downplayed by the Forest. At least 4 residents of Tenakee Springs depend on subsistence marten trapping in Tenakee Inlet for needed income in winter months. Due to the project's direct and adverse economic impacts on Tenakee Springs residents, the Forest Service needs to fully disclose and evaluate additional mitigating efforts beyond applying the new marten Standards and Guidelines.

SEACC-38

SEACC-38 All of the applicable modified 1997 Forest Plan standards and guidelines for marten management will be fully disclosed and evaluated in the 1997 TLRMP Final EIS and modified 1997 Forest Plan.

SEACC-39

XIII. THE DEIS FAILS TO FULLY EVALUATE THE IMPACTS ASSOCIATED WITH LOG TRANSFER.

The Sunny Cove and 10-Mile Creek areas are heavily used by Tenakee Springs residents for fishing and recreation. In order to cause the least adverse impact on these uses, the Forest Service must fully disclose and evaluate all impacts related to log transfer.

SEACC's Comments on
Indian River DEIS

FS Response

SEACC-36 The Forest Service consulted with ADF&G Habitat Biologists Phil Mooney and Linda Perkins on September 30, 1997 and April 6, 1998 regarding the brown bear/riparian area standard and guideline. As a result of these consultations, the unit cards for the harvest units in the lower portion of 10-Mile Creek have been modified. A wildlife biologist will be on site to identify a brown bear buffer of approximately 500 feet.

SEACC-39
(cont.)

The DEIS indicates that the Forest Service is considering a variety of LTF structures at all three possible LTF locations. Full consideration of these alternatives should be integrated with the evaluation of project alternatives in the DEIS. The Forest Service should also expand its analysis to include onshore storage with barging of logs, and direct helicopter transfer of logs to barge, in addition to traditional in-water log transfer.

All potential impacts on the human environment from these various alternatives must be disclosed, including impacts due to bark debris and from filling tidelands. The Forest Service analysis must show that it is not feasible and prudent to adopt any of the several zero-discharge alternatives available to it before allowing in-water transfer of logs. The Forest Service must also disclose credible and complete monitoring data showing that operation of LTFs will comply with State of Alaska water quality standards, including the State's antidegradation policy. See 18 AAC 70.011(9).

XIV. THE DEIS FAILS TO FOLLOW THE FOREST PLAN'S STANDARDS AND GUIDELINES FOR KARST AND CAVES AND VIOLATES THE NATIONAL FOREST MANAGEMENT ACT (NFMA), THE NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) AND THE FEDERAL CAVE RESOURCE PROTECTION ACT (FCRPA).

Section 1604(1) of the NFMA requires that all "[r]esource plans and permits, contracts, and other instruments for the use and occupancy of the National Forest lands shall be consistent with the land management plans." 16 U.S.C. § 1604(1). Since the Indian River Timber Sale has been developed as a Category 3 Timber Sale under the revised TLMP ROD, it must be consistent "with all the applicable management direction of the revised plan, except for new standards and guidelines for wildlife." ROD at 41.¹ By failing to follow the revised Forest Plan's Standards and Guidelines for karst and caves, the DEIS therefore violates the NFMA. Furthermore, since the Forest Plan's standards and guidelines were developed "to protect the many resource values within underlying significant cave systems as per the requirements of the Federal Cave Resource Protection Act," failing to follow the Forest Plan constitutes a violation of FCRPA. Unfortunately, such problems with karst management are not limited to this project. See letter to Forest Supervisor Brad Powell from the Tongass Cave Project (Jan. 19, 1990)(attached).

On page 3-9, the DEIS states that "[k]arst lands found to be of high vulnerability are removed from the commercial forest lands suitable land base." Such direction is consistent with the revised Forest Plan's standards and guidelines for karst and caves which state "[k]arst lands found to be of high vulnerability will be identified and removed from the commercial forest lands suitable land base." Forest Plan at 4-19. However, the DEIS later notes that "[a]ll of the action alternatives include timber management activities assessed by geology consultant Harza Northwest, Inc., as having low, moderate, and high vulnerability." DEIS at 4-4 (emphasis added). Upon reviewing the unit cards in Appendix J, it becomes quite obvious that all alternatives do propose logging activities on high vulnerability karst lands, in violation of the revised Forest Plan's Standards and Guidelines and NFMA. Furthermore, the DEIS proposes logging activities on karst lands of moderate vulnerability but fails to disclose any efforts to mitigate harmful effects as required by the revised Forest Plan, again in violation of NFMA. Forest Plan at 1-14.

¹ For the record, we believe that this transition rule violates NFMA. All timber sales not under contract by the date the ROD was signed must meet all TLMP requirements.

SEACC's Comments on
Indian River DEIS

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FS Response

SEACC-39 All of the proposed LTF structures were evaluated in the LTF portion of the transportation section in Chapter 4. Evaluation of an onshore storage/scaling site has been added to Alternative C.

In May 1996, we analyzed the costs of helicopter swing yarding logs from a storage area or landing in the Project Area to either salt water or another landing approximately one-quarter mile away. These costs would be approximately \$155 per mbf. Additional costs at the drop point (for barges, operating equipment, towing costs, etc.) could add \$50 - \$125 per mbf (Indian River Timber Sale(s) Project Planning Record). For Alternative C, net stumpage (Table 4-22) would drop from minus \$170 per mbf to approximately minus \$375 to minus \$450 per mbf. There would also be a substantial increase in noise in and around the LTF area that could not be mitigated.

Refer to the Permits and Licenses section in Chapter 1 for additional information regarding the role of other agencies in approving Forest Service timber harvest plans.

SEACC-40 Refer to Response TCP-3 and TCP-4.

SEACC-41 Comment noted.

SEACC-41

FS Response

SEACC-40 (cont.)

Upon examining the road cards found in Appendix I of the DEIS, one also learns that the DEIS proposes building roads across high vulnerability karst lands. According to the revised Forest Plan, however, "[l]oads across [high vulnerability karst lands] are inappropriate except" ... "if no other route or option was available and karst resource values would not be compromised." Forest Plan at I-15. Not only does the DEIS fail to inform the public about the roads proposed on high vulnerability karst lands, it also fails to discuss whether or not other options were available or evaluate whether karst resource values would be compromised. By failing to fully disclose and evaluate the potential effects on the human environment from the roads crossing high vulnerability, the DEIS violates NEPA. By failing to follow the revised Forest Plan, the DEIS violates NFMA.

A cave in the project area - "Reflection Cave" - was nominated as a significant cave in 1994. This nomination was reviewed and approved by a Significance Committee. The DEIS should therefore treat this cave as significant. If the Forest Service fails to treat this cave as significant, it must fully explain why. Without such an explanation, the Forest Service lacks a reasonable basis for not considering this cave significant. The DEIS admits that all action alternatives propose logging activities within 1/4 mile of this cave and states that the cave "would be protected ... [I]f the Forest Supervisor determines that this cave is significant." DEIS at 4-3. The DEIS fails to disclose when the Forest Supervisor will make a final determination on this cave's significance. Without knowing this information, the public is unable to judge whether the Forest Service will comply with TLMF and adequately protect this cave resource. The public is therefore unable to participate fully in the NEPA process.

SEACC-42

SEACC-42 The cost to prepare and administer any timber sales resulting from the Record of Decision for this project has not been developed.

The amount of Regional Office overhead expended on this timber sale project is outside the scope of this EIS.

Purchaser road credit has been eliminated from Forest Service timber sales.

There are too many variables to determine future 25 percent fund payments to communities; these payments have not been developed for this EIS. Refer to the Timber Receipts and Payments portion of the Economics and Social Values section in Chapter 3 for additional information, including fiscal year 1997 payments.

XV. THE FOREST SERVICE NEEDS TO FULLY DISCLOSE AND EVALUATE THE IMPACTS OF THIS TIMBER SALE ON THE U.S. TREASURY

While the DEIS makes much of the fact that logging jobs will produce revenue for individuals and companies, the DEIS fails to consider the economic impact of this timber sale on the U.S. Treasury. Due to high costs of road construction and relatively low returns for Tongass timber, the Tongass timber program loses tens of millions of dollars each year. Most recent estimates indicate that the U.S. Treasury lost over \$30.5 million. See The Wilderness Society, *Double Trouble - The Loss of Trees and Money in Our National Forests* (January, 1998)(attached). The public has the right to know the expected losses that will occur to the U.S. Treasury due to this timber sale.

Please disclose how much this timber sale will cost to prepare and administer. The Forest Service should also disclose how much overhead at the regional office will be expended on this sale. Please also disclose how much available road credits will total for this sale and expected payments to communities

With information currently available, one must use FY 1996 data to extrapolate projected losses for this sale. In preparing and selling 120 mmbf on the Tongass in 1996, the U.S. Treasury lost \$30.6 million. For every mmbf of Tongass timber sold, the U.S. Treasury lost \$255,000. Therefore on a 28.7 mmbf sale, the U.S. Treasury would lose as much as \$7.32 million. Obviously, the U.S. Treasury stands to lose millions of dollars on this timber sale. The Forest

SEACC's Comments on
Indian River DEIS

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SEACC-44

SEACC-45

SEACC-45
(cont.)

Service must fully disclose and evaluate all potential costs to the U.S. Treasury associated with this timber sale. According to the economic analysis, neither current market conditions nor the mid-market assessment indicate that anyone will be able to afford this timber sale. We are left wondering why the Forest Service is spending so much money preparing a timber sale that will assuredly cost taxpayers millions to supply timber in excess of market demand when all indications show that this timber is unlikely to be sold or sold only at base rates. The Forest Service must also disclose how much of the timber sale is comprised of yellow cedar. With the current export policy, all yellow cedar may be exported in the round from the Tongass. The Forest Service must disclose how much money the U.S. Treasury is losing to provide this wood which may only provide jobs in Asia.

XVI. THE DEIS VIOLATES NEPA, NFMA, AND THE TTRA BY RECLASSIFYING THE TONGASS TIMBER INVENTORY AND IGNORING THE REQUIREMENT OF PREVENTING THE EARLY DEPLETION OF THE HIGHEST-VOLUME OLD GROWTH ON THE TONGASS

As explained in our appeal of the Tongass Plan, the Forest Service has a duty to accurately and completely identify the location of these stands, and evaluate the impacts of the proposed alternatives on them. See SEACC's Appeal of the Revised Tongass Plan at 85-92 (attached). By adopting the new volume strata of the new Forest Plan and failing to disclose the extent of proposed logging of VC 6&7 stands, the Forest Service has substantially impaired the public's ability to make informed decisions about impacts from this proposed project. This violates NEPA. The Forest Service has shown that such analysis is indeed possible. The Crystal Creek Timber Harvest DEIS revealed how much logging was proposed for VC 6&7 in that timber sale. See Crystal Creek Timber Harvest DEIS at 3-8. The Forest Service must disclose this information and assure the public that it is not highgrading the project area with this proposed sale and therefore violating TTRA and the diversity requirements of NFMA.

SEACC-46

Yours,



Marc Wheeler
Special Projects Coordinator

SEACC's Comments on
Indian River DEIS

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FS Response**SEACC-45** Refer to Response TK-3.

Refer to the Species Composition of Forest Lands portion of the Timber section in Chapter 3; 2.6 percent of the commercial species in the Project Area is yellow cedar.

Comment noted regarding export policy. Refer to the new export policy issued March 27, 1998 for additional information.

Export of yellow cedar from any Project Area timber sales may only be approved by the Regional Forester based on current processing capabilities and economic conditions.

Direct and indirect U.S. employment and income is displayed by alternative in Table 4-38.

SEACC-46 Comment noted.

Highgrading or proportionality analysis is a TTRA requirement for long-term contract timber offering planning efforts. The long-term contract on the Chatham Area was cancelled in April 1994 and the Ketchikan Area long-term contract does not apply to this project. None of the timber volume made available in this EIS will be offered as part of the remaining long-term contract; therefore, a proportionality analysis is not required for this project.

Regarding NFMA diversity requirements, refer to Response SEACC-32.

List of Attachments

- Kiel, Dave, "Mystery Shrouds the Forest," *The Paper*, June 21, 1996.
- O'Toole, Randall, Review of the Final Tongass Forest Plan Revision.
- Letter from George Leonard to Sen. Ted Stevens, April 23, 1991.
- Letter from Sen. Ted Stevens to George Leonard, April 16, 1991.
- Letter from O.J. Graham to Michael Lunn, September 21, 1990.
- O'Toole, Randall, Review of Tongass Forest Plan Assumptions About Timber Receipts and Costs, (Oak Grove, OR: The Thoreau Institute, Nov. 14, 1997).
- Hoshi, "Japan Market Report," *Pacific Rim Wood Market Report*, November, 1997.
- Barr, Linda Keller, "Japan: Change Ahead," *Pacific Rim Wood Market Report*, October 1997.
- "Down She Goes Again," *The Economist*, Nov. 15, 1997.
- Letter from Shelley Wilson to Jim Franzel, Dec. 4, 1997.
- SEACC's Appeal of the Revised Tongass Plan, Sept. 25, 1997.
- Thomson, Lori, "Goldbelt's selective logging at Echo Cove receives praise," *Juneau Empire*, April 12, 1997.
- Letter from Tongass Cave Project to Brad Powell, Jan. 19, 1997.
- The Wilderness Society, Double Trouble: The Loss of Trees and Money in Our National Forests, January, 1998.

TENAKEE HOT SPRINGS LODGE

907-736-2400 VOICE & FAX

PO Box 3

Tenakee Springs, AK 99841

October 1, 1997

Forest Supervisor

Tongass National Forest, Chatham Area

Attn.: Indian River EIS

204 Sigina Way

Sitka, AK 99835

Dear Sir,

We have several comments we would like to make regarding the proposed Indian River Timber sale.

1. To begin with, we completely disagree with the Forest Service's rational in justifying the need for a massive clear-cut sale in the Indian River area at this time. It is generally known that there is not a strong local market for most of the timber that will be cut in this sale. All of the alternatives are based on large scale logging and massive clear-cuts. Nowhere in the EIS is there an alternative for small scale value-added type sales. If ever there was an area in the Tongass that was perfect for this type of management, Indian River is certainly it. In the event that a timber sale were to be offered in this area, it should be a small scale selective cutting sale that only harvests some of the high value timber.

S&JM-1

2. The proliferation of clear-cuts in and around Tenakee Inlet is causing severe and irreparable damage to our business as sport fishing lodge. Our clients are appalled and disgusted by the extent of the destruction they see in this area. The single minded, short sighted insistence on large scale clear-cutting of the Tongass is having an increasingly negative effect on the tourism and guided recreational fishing industry. The potential damage including not only the visual effects but also damage to salmon spawning areas due to silting and higher water temperatures is also beyond question.

S&JM-2

3. Although the Forest Service's experiments with alternatives to clear-cutting are in their early stages, it has been demonstrated on private native corporation lands North of Juneau that selective logging with helicopters is very profitable. In addition, the helicopter logging conducted in Corner Bay recently more than adequately demonstrates the economic feasibility of selective helicopter logging. When you can take out everything, including pulp and utility logs, as was done in that sale and still be economical, it is obvious that you can be even more profitable when you only take out the high value timber and leave the basic integrity of the old growth forest intact. With the change in the needs of the timber industry that has been brought about by the closure of the pulp mills, it is simply not necessary to destroy the rest of the Tongass in

S&JM-3

FS Response

S&JM-1 Refer to the first paragraph of Response TK-1.

S&JM-2 None of the clearcut with retention timber harvest units in any of the Project Area action alternatives are visible from Tenakee Inlet.

Refer to Response SM&LP-4.

S&JM-3 See Table 2-3 for a summary of harvest method by acres and by timber volume.

S&JM-3
(cont.)

order to supply timber to the industry. The times are changing and the Forest Service should take the bold step and make the changes in timber harvest policy now that are certainly inevitable.

S&JM-4

4. Last year the City of Tenakee Springs and the Forest Service negotiated a "Memorandum of Understanding" that was voted on and approved by the residents of Tenakee. The understanding was that the Sunny Cove sight would be used and no LTF would be established at 10 mile. Some of the alternatives show LTFs at both sights so the Forest Service was evidently not negotiating in good faith. (again)

S&JM-5

5. We have lived in Tenakee for 22 years and over that time we have witnessed the destruction of grand and irreplaceable old growth timber stands in many of our most treasured places. Places we used to hunt, hike, fish and find peace and solitude are forever gone. We cannot even bare to visit them any more. Areas that where essential habitat for wildlife, most notably deer and bears, have been devastated and can no longer support the creatures that once depended upon them. The Forest Service's own scientific studies show that there will be significant damage to deer habitat that will result in reduced availability of deer for sport and subsistence hunting.

S&JM-6

6. The continued devastation of the forest surrounding Tenakee Inlet brings with it no benefit whatever to Tenakee. For us, it is a lose / lose situation. Everything that makes Tenakee an attractive place to live and work is being systematically destroyed. And for what? To provide a few jobs for a few years for people that are imported from the lower 48. What insanity!!!

Sincerely,

Samuel E. McBeen

Samuel E. McBeen

Joan M. McBeen

Joan M. McBeen

cc President Bill Clinton, Vice President Al Gore, Governor Tony Knowles,
Chief Dornbeck

FS Response

S&JM-4 Refer to Response ES-4.

S&JM-5 Impacts to deer habitat and habitat capability are discussed in the Wildlife and Subsistence sections in Chapter 4.

S&JM-6 Comment noted.

212 Observatory Street
Sitka, AK 99835
20 January, 1998

Gary Morrison
Forest Supervisor
Tongass National Forest, Chatham Area
ATTN: Indian River EIS
204 Signaka Way
Sitka, AK 99835

Dear Mr. Morrison:

The following are my personal comments on the Indian River Timber Sales Draft Environmental Impact Statement. I write these comments as a property owner and frequent visitor to Tenakee Springs. I appreciate the opportunity to comment and hope that you find these comments useful.

The purpose and need for the project is based on outdated and flawed assumptions. The local economies around Tenakee Springs would generally be better provided for by small sales, which could provide local long-term employment in the wood products industry. Large scale sales such as the proposed Indian River Project will provide little work for locals and will have long-term deleterious effects on subsistence living and on the basis for the tourism and recreational industries upon which many depend.

I also find this sale offensive as a US taxpayer. Each of the proposed alternatives are estimated to have a net cost to the government and taxpayers of more than \$160 per thousand board feet. In addition, there will be a reduction in taxes paid to the government over the foreseeable future by residents of Tenakee whose incomes will be negatively affected by the sale.

As someone who uses the East Tenakee Trail to access our land, I find it absurd that the DEIS treats the trail strictly as a recreational resource. While this is certainly one use, the trail provides an essential transportation corridor for residents of Tenakee living to the east of the community core. As such, it is not acceptable to have trail use seriously disrupted for any length of time.

One of the key reasons why many of us choose to live or visit Tenakee is because it is not an area heavily impacted with the noise of modern technology. Heavy equipment along our trail will present a serious loss of quality of life for us as will the noise of helicopter logging near our homes and properties.

All the action alternatives except for E propose road construction bringing the Indian River Road to within approximately 0.75 miles of the end of the Game Creek Road. This is not acceptable and violates Section 106 of the Tongass Timber Reform Act, which states that the Forrest Service "shall not construct a vehicular access road connecting the Indian River and Game Creek Roads, and (my emphasis) shall not engage in any further efforts to connect the city of Tenakee Springs with the logging road system on Chichagof Island, unless the city councils of Tenakee Springs and Hoonah both

FS Response

SL-1 Refer to Response TK-1.

SL-2 Refer to Response TK-3. The amount of taxes paid by residents of Tenakee Springs are not expected to change significantly as a result of this project. See the Economics and Social Values section in Chapter 4 for additional information.

SL-3 The East Tenakee Trail is discussed in the Transportation System and Heritage Resources section in Chapter 3, as well as the Recreation section.

The intent of mitigation measures in Appendix C and the MOU with the City of Tenakee Springs are to "maintain clear access to the East Tenakee Trail during (timber) sale operations."

SL-4 Appendix C also displays additional MOU mitigation measures designed to reduce potential noise pollution from timber management activities. Currently, there is no technology available to effectively eliminate all heavy equipment and helicopter noise from Timber Production land use designations.

SL-5 Refer to Response ADF&G-9.

SL-1

SL-2

SL-3

SL-4

SL-5

FS Response

SL-5
(cont.)

determine that the road should be constructed....” I do not believe that it is reasonable to suggest that bringing the Game Creek Road and Indian River Road to within .75 miles of each other is anything but an attempt to increase connectivity of Tenakee with the road system. Such a short distance will provide a relatively easy route for ATV users to drive between the two systems and ATV’s already are able to use the beach to access the center of Tenakee from the Indian River Road.

I was not part of the group that worked long and hard to develop the November 12, 1996 Memorandum of Understanding between the City of Tenakee Springs and the Forest Service. Nevertheless, I do know that the Citizens of Tenakee Springs devoted substantial effort to developing this document. It is my understanding that through said MOU the Forest Service agreed to neither directly nor indirectly develop, use, or permit such development or use of alternative log transfer facilities in connection with the Indian River Sale for the duration of the MOU. My reading of the DEIS failed to find any mention of this agreement in discussion of the MOU.

SL-6

If the Forest Service did not feel the terms of the MOU were binding, then they should not have signed it in the first place. If they did agree that the terms were binding, then displaying alternate LTF locations in various alternatives is not, in fact, displaying a reasonable range of alternatives because all alternatives analyzed under NEPA are to be feasible alternatives.

Alternatives B, D, and F display LTF locations that violate the MOU and are clearly intended as a means around the MOU. This is a move that can only cause offense to residents of Tenakee Springs. Alternative F has the added problem of resulting in completely unnecessary impacts to the East Tenakee Trail.

SL-7

The Alaska Department of Transportation and the City of Tenakee Springs spent considerable dollars and effort over the last 2 years improving the East Tenakee Trail. Unnecessarily impacting the trail is just another example of poor Forest Service planning that wastes taxpayers dollars.

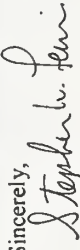
SL-8

Forest Service disregard of the MOU is a breach of the new Tongass Land Management Plan’s call for collaborative stewardship. To develop such an agreement was a laudable step, but to then ignore it is antithetical to any spirit of trust and cooperation begun with such an effort.

SL-9

Karst sections of the DEIS fail to meet the requirements of the TLMP karst standards and guides. Timber harvest is planned on high vulnerability karst, roads are planned across high vulnerability karst with no discussion of other alternatives, and no discussion of mitigation measures planned for harvest on moderate vulnerability karst is provided.

Thanks again for the opportunity to comment. It is too bad that I can find little good to say about this sale. I hope that the Forest Service will look closely at all comments and come to the realization that this sale is seriously flawed and needs major revisions, including substantial reduction in size, before any FEIS is published.

Sincerely,

Stephen W. Lewis

SL-10

SL-6 Refer to Response ES-4.

SL-7 None of the trail sites maintained by the Alaska Department of Transportation and Public Facilities and the City of Tenakee Springs would be impacted by any of the action alternatives. Also, refer to Response SL-3.

SL-8 Refer to Response ZS-129 and ADF&G-6.

SL-9 Refer to Response TCP-3 and TCP-4.

SL-10 Comment noted.

Stan Moberly & Linda Perine
P.O. Box 622
Tenakee Springs, AK 99841 USA
e-mail: <moberlys@wollenet.com>

January 13, 1998

Forest Supervisor
Tongass National Forest Chatham Area
Attn: Indian River EIS
204 Signaka Way
Sitka, AK 99835 USA

Dear Sir:

We are writing to protest the timber sale on Indian River. The benefits of logging this watershed cannot outweigh the loss in fish and wildlife habitat for many, many years. Indian River is a important salmon producing river. Many bears and deer depend on the river for habitat and food.

The impacts, from logging and related human activity associated with logging, will be great and last many years. Fishing, which includes recreational substance and commercial, will be affected. At one time the Alaska Department of Fish and Game even stocked chinook salmon in Indian River. Reducing the fishing benefit will affect the tourist based industry too. Many tourist visit Indian River to view brown bears and to enjoy the peace and tranquility of the area.

The USFS has many examples to drawn from up, to understand and as witness to the negative impacts of logging. The River ecosystem and life in Tenakee Springs will be altered forever. There is not a single living person, in Alaska now, who will be here when the River ecosystem is able to fully recover from the logging and return to a state as it is at present. Bring the Hoonah road system closer and closer to Tenakee Springs is against the wishes of the people who live in Tenakee Springs. Altering their life style and way-of-life is certain to happen if the watershed is logged.

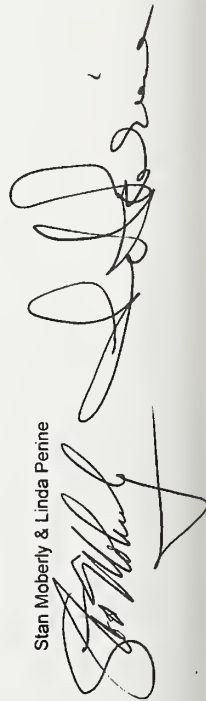
Where is the USFS good faith in this EIS process? For example, it was our understanding, in the MOU approved last year, the USFS agreed there would be no log dump at Ten-Mile Creek. Some of the alternatives of the Indian River EIS include a log dump at Ten-Mile Creek. Why is this? Does this mean the MOU, signed in good faith, was just a joke or that the USFS is withdrawing from the MOU?

While there may be some short term benefits, to whom, we do not know, it is our belief there are no long term benefits to anyone. And the most incredible reasoning of all is that this sale will not only negatively impact the local people, it'll cost the US taxpayer money! Explain this to any rational person.

Please keep us informed of the DEIS process and please let the record clearly show that we are very much against the logging of Indian River.

Sincerely,

Stan Moberly & Linda Perine



FS Response

SM&LP-1 Comment noted.

SM&LP-2 Comment noted.

SM&LP-3 The Forest Service and ADF&G cooperatively stocked chinook salmon in Indian River. See the Recreational Fisheries portion of the Soils, Water, and Fish section in Chapter 4.

SM&LP-4 The project is not expected to result in any quantifiable effects on fish resources. See the Fish and Fish Habitat portion of the Soils, Water, and Fish section in Chapter 4. Impacts to the recreation resource are displayed in the Recreation section in Chapter 4.

SM&LP-5 Comment noted.

SM&LP-6 Comment noted.

SM&LP-7 Social value impacts are discussed in the Economics and Social Values section in Chapter 4.

SM&LP-8 Refer to Response ZS-129.

SM&LP-9 Comment noted.

SM&LP-10 Refer to Response TK-3.

SM&LP-11 You have been added to the mailing list for the Final EIS. Your letter and our responses to your comments have been made part of the record.

The Tongass Community Alliance
P.O. Box 117
Gustavus, Alaska 99826

January 20 , 1998

Linn Shipley, Team Leader
USDA Forest Service
Tongass National Forest, Chatham Area
204 Siginaka Way
Sitka, AK 99835

Re: Comments on Indian River Timber Sale(s) DEIS

Dear Mr. Shipley

Please accept these comments on the Indian River Timber Sale(s) DEIS on behalf of the Tongass Community Alliance. The Tongass Community Alliance is an association of six small Southeast Alaska communities and was formed to advocate truly sustainable and genuinely multiple-use forest management policies and practices in southeast Alaska's forests.

We support the City of Tenakee Springs' long-standing goals of advocating for sound, sustainable management of Tenakee Inlet's forests for the long-term benefit and stability of the City of Tenakee Springs.

We wholeheartedly support the comments made by the City of Tenakee Springs on the Indian River DEIS, adopted by Resolution 98-15. We are especially concerned with the Forest Service's efforts to engage in what it refers to as "collaborative stewardship" while at the same time planning industrial-scale clearcuts around Tenakee Springs, and ignoring that community's repeated suggestions regarding the formation of a "community development reserve" to provide a truly-sustainable supply of old growth-quality wood for local manufacturing.

Thank you for accepting these comments,

Linn Shipley, secretary

Mim McConnell, President
Tongass Community Alliance

TCA-1

TCA-2

FS Response

TCA-1 Refer to Response CTS-1 through 18.

TCA-2 Refer to the second paragraph of Response TK-1.



TONGASS CAVE PROJECT

A PROJECT OF THE NATIONAL SPELEOLOGICAL SOCIETY

212 Observatory Street
Sitka, AK 99835
4 January, 1998

Gary Morrison
Forest Supervisor
Tongass National Forest, Chatham Area
ATTN: Indian River EIS
204 Siginaka Way
Sitka, AK 99835

Dear Mr. Morrison:

The following are comments by the Tongass Cave Project on the Indian River Timber Sales Draft Environmental Impact Statement. We appreciate the opportunity to comment and hope that you find these comments useful.

First, in the DEIS, a cave which was nominated and approved as a Federally designated Significant Cave several years ago is discussed as if such status is still pending. If this is the case then the Chatham Area has been remiss in not signing the appropriate paperwork necessary to finalize this action and is in violation of Federal Regulations. For those caves nominated under the initial procedures the Forest Supervisor is not responsible for determining cave significance. Rather, the Supervisor is responsible for signing the papers granting significance to caves already determined to be significant by the significance panel. We request notification when you have signed the Cave Significance documents that all caves so nominated be treated as significant and cave locations be kept confidential from this point forward. Any caves nominated for significance in the future should be treated as significant unless and until the Supervisor determines such a cave not to be significant and until any appeals of such a decision have run their course.

We were pleased to note that karst vulnerability was initially assessed for the Indian River Project Area, however we note some problems with the Karst Vulnerability Assessment Final Report, upon which the karst portions of the DEIS are presumably based. The authors of the Indian River Karst Vulnerability Assessment, Final Report arbitrarily modified Karst Standards and Guides without consulting other collaborative stewards of karst. This was done when they decided to eliminate steep slopes from consideration in defining high vulnerability areas on the basis of soil depth. The results of this arbitrary decision are unclear because no further evaluation of slope was made in Stage 2 of the assessment. The Tongass Cave Project agrees that there may be times when it is appropriate to modify Karst Standards and Guides for specific situations. However, such decisions must not be made unilaterally and the results of both alternatives should be considered in vulnerability assessments. The consultant should finish his job and provide

TCP-1

TCP-2

FS Response

TCP-1 The Forest Supervisor has determined that all of the nominated caves on the Chatham Area are significant. The determination was made in a letter to the nominating organization dated February 17, 1998. A copy of this letter was sent to the organization commenting on February 26, 1998.

Nominated caves have been, and will continue to be, treated as significant. The location of caves determined to be significant or nominated as such has been kept confidential, and will continue to be kept confidential.

TCP-2 The contractor for the karst vulnerability report excluded the slope parameter in the Phase II analysis based on the field survey. This was justified by the extent of deep soils predominately covering poorly to moderately well-developed karst throughout the Project Area (Harza Northwest, Inc. 1996, page 19).

Sub-contractors for Harza Northwest, Inc. included Tom Aley from the Ozark Underground Laboratory, and Bill Elliott. They were also members of the Karst Panel that recommended the karst vulnerability criteria. Because they are the professionals that developed the vulnerability criteria, they are the best people to make the decision whether or not to include one or more of the criteria based on the actual field conditions.

TCP-2
(cont.)

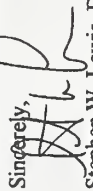
an assessment of the results of eliminating steep slopes from analysis. We request a copy of such an assessment upon its completion.

Sadly, Final TLMP Karst Standards and Guidelines appear to have been largely ignored in further sale planning. Using the Indian River DEIS, we have compiled tables showing units and roads located on karst which are included in the alternatives (attached). High vulnerability karstlands have not been removed from the timber base and no explanation is provided as to mitigation planned for harvest on moderate vulnerability karst. Roads seem to have been planned without regard to karst terrain. There is no explanation of why roads must be placed on high vulnerability karst or discussion of alternative locations for roads. These problems must be addressed in the FEIS.

Only one Unit Card for harvest on karst (VCU 2200, Unit 1511) gives any instructions for further examination of the unit for karst by layout and other crews. Even in this instance the instructions are inadequate—karst features include much more than just caves, insurgences and resurgences. Furthermore, a mere litany of names is insufficient knowledge for crews to take to the field. All crews working in karst should be trained to observe such features. In addition, it is necessary to have karst specialists examine units known to occur on karst terrain for features before layout is undertaken. It is not clear from the DEIS that the authors are aware that cave features and karst features are interlinked and that protection of the caves necessitates protection of the karst.

We look forward to reading an expanded, well-thought-out section on karst in the FEIS. It is our hope that such a section will meet all the requirements of the new TLMP Karst Standards and Guides and the Federal Cave Resources Protection Act and that any ensuing harvest will also meet these requirements on the ground.

Sincerely,



Stephen W. Lewis, Director
Tongass Cave Project

TCP-3

TCP-3 The high vulnerability mapping completed by Harza Northwest, Inc. under contract to the Forest Service has been refined to more clearly show the areas of high vulnerability. These areas (approximately 85 acres) have been deleted from the timber harvest units.

The Petersburg Assistant Supervisor's Office will be provided with an Indian River karst high vulnerability map to remove these areas from the suitable timber base.

The Final EIS contains additional discussions regarding roads on karst topography as the organization commenting suggests.

TCP-4 Minerals/Karst unit card narrative sections have been updated and corrected as suggested.

The Forest Service intends to train field crews in karst feature recognition prior to unit lay-out. If karst features are observed during lay-out, the Area Geologist will be notified and a determination of karst vulnerability completed.

Karst surveys and inventories were completed in the Indian River Project Area in 1994 and 1995. Additional on-the-ground, unit specific survey work will be completed during lay-out. If areas of high vulnerability karst are located during lay-out, they will be deleted from the harvest unit.

The Forest Service intends to follow the law, i.e. The Federal Cave Resources Protection Act of 1988.

FS Response

Indian River, Harvest Units on Karst

VCU	Unit	Karst Vulnerability					Alternative/Harvest Method					Notes
		None	Low	Mod	High		B	C	D	E	F	
2200	1511		x				h,st			h,st	h,st	layout crews asked to look for caves, insurgences and resurgences
	1610		x				h,or			h,pc	h,pc	No request for further exam on cards
	4011		x					s,st		s,st	s,st	No request for further exam on cards
	4012		x		x			h,st		h,st	h,st	No request for further exam on cards
	4120		x		x		h,cc	h,cc	h,cc	h,cc	h,cc	No request for further exam on cards
	4420	x		x	x		c,cc			c,cc	c,cc	No request for further exam on cards
	4440		x		x		h,pc			h,cc	h,cc	No request for further exam on cards
	4620		x		x					h,or	h,or	No request for further exam on cards
	4710	x			x					s,st	s,st	No request for further exam on cards
	4910		x							h,cc	h,cc	No request for further exam on cards
2221	5010		x				h, or			h,pc	h,pc	No request for further exam on cards
	5011	x			x		s,or			s,pc	s,pc	No request for further exam on cards
	5020		x		x		h,or			h,pc	h,pc	No request for further exam on cards
	5040		x		x					h,cc	h,cc	No request for further exam on cards
	5080	x			x		h,or			h,pc	h,pc	No request for further exam on cards
	5220		x		x		h,gs			h,gs	h,gs	No request for further exam on cards
	5840		x				h,or			h,or	h,or	No request for further exam on cards
	20810	x					h,or	h,or	h,or	h,or	h,or	No request for further exam on cards
	20812	x			x		h,or	h,or	h,or	h,or	h,or	No request for further exam on cards
	21010	x			x		c,st	c,cc	c,cc	c,st	c,st	No request for further exam on cards
2160	21310		x		x		h,or			h,pc	h,pc	No request for further exam on cards
	21610	x			x		h,st	h,st	h,st	h,st	h,st	No request for further exam on cards
	21711				x					c,cc	c,cc	No request for further exam on cards
	21811		x				h,gs			c,cc	c,cc	No request for further exam on cards
	21820	x			x		h,gs	c,cc	c,cc	c,cc	c,cc	No request for further exam on cards
	21830		x		x		h,cc	h,cc	h,cc	h,cc	h,cc	No request for further exam on cards
	21840	x			x		h,cc	h,cc	h,cc	h,cc	h,cc	No request for further exam on cards
	60420		x		x			c,cc	c,cc	c,cc	c,cc	No request for further exam on cards
	60810		x					h,cc	h,cc	h,cc	h,cc	No request for further exam on cards
	60910				x			h,cc	h,cc	h,cc	h,cc	No request for further exam on cards
2160	63820		x				h,gs	h,cc	h,cc	h,cc	h,cc	No request for further exam on cards
	63850	x			x		h,cc	h,cc	h,cc	h,cc	h,cc	No request for further exam on cards

h=helicopter, c=cable, s=shovel,
cc=clearcut w/ greentree retention, st=single Tree Selection, pc=Patch Clearcut, or=overstory removal

Indian River, Roads on Karst

Road #	Karst vulnerability	NOTES	
		pages 1 and 2, no note of how to maintain water flow and quality	karst comment not included, new road and LTF for Alternative F
7500	L,M,H		
75002	???		
75003	M, H		
75004	HIGH		
7502	N,L,M,H		
75023	???		
75028	M,H		
7507	???		
7509	???		
	L=low		
	M=Moderate		
	H=High		
	???=No Information included in DEIS		

T.F. SMITH

Licensed Master Guide, retired
3407 HALIBUT POINT ROAD
SITKA, ALASKA 99835
January 15, 1998

Lynn Shipley, Team Leader
USDA Forest Service
Tongass National Forest, Chatham Area
204 Signaka Way
Sitka, AK 99835

Dear Team Leader Shipley:

My main objection to the Indian River Timber Sale is that it will harm more people than it benefits. The people who benefit are all subsidized by tax payers. To me the main value of proposed clearcut logging area in question is for hunting, subsistence, and recreation. If I have to sacrifice these important values, at least the logging of public lands should put money into the U. S. Treasury instead of increasing the National debt, as it has done in the past.

Yes, I use lumber, toilet paper, and many products made of trees, however, the record shows that most of the Pacific Northwest timber has been exported to Pacific rim countries. Relatively few people have profited.

Yes, I know that Sitka spruce and hemlock are a renewable resource, however the average old growth spruce and hemlock trees in Tongass National Forest are about 300 years old, equivalent to 12 human generations. Therefore, these trees practically are non-renewable. The value of Sitka blacktail deer over the span of 12 human generations would be worth more than the trees. Clearcutting has wiped out a huge amount of vital winter deer range.

I have done much hunting in Tenakee Inlet and am familiar with the area. Logging has greatly harmed both my former guiding for brown bear and my personal hunting for deer. It irks me that I am obligated to pay a share of the annual deficit caused by this subsidization of the timber industry.

Yours truly,
Carlton F. Smith
Carlton F. Smith

FS Response

TFS-1 Refer to Response TK-3.

TFS-2 Refer to Response TK-5.

TFS-3 Sitka black-tailed deer habitat impacts are discussed in the Wildlife section in Chapter 4.

TFS-4 Refer to Response TK-3.

TFS-1

TFS-2

TFS-3

TFS-4

Linn Shipley, Team Leader
 USDA Forest Service
 Tongass National Forest Chatham Area
 attn: Indian River EIS
 204 Siginaka Way
 Sitka, Alaska 99835

The Indian River timber sale is in an area that would greatly benefit the residents of Tenakee who are trying to make a foothold in small scale manufacturing, there is no provision to ensure us any availability of high quality timber in this area. Why not break up the sale, at the same time scale it way down, so as not to cause the negative impact on our subsistence, and have multiple tiny timber sales for the local inhabitants, at a much slower rate? "100 year rotation Community Development Reserve" Now, why can't that be adopted? This kind of policy and new way of thinking would greatly improve the image of the USFS and many of their current relationships.

My biggest concern with the timber sales in Tenakee Inlet are the negative impacts on subsistence. Another large concern is that these sales are totally unjustified. My family and I survive on subsistence. By law (ANILCA) subsistence is to be the PRIMARY use on Federal Lands. Your Indian River timber sale will have a great negative impact on our subsistence.

The USFS interprets the law of INILCA that subsistence is the main priority unless "necessity" deems otherwise, like the sale of timber being the number one priority. Knowing that the Indian River timber sale will have such a negative impact on our subsistence, you must have put a "necessity" on the sale and cutting of this timber to be doing it at such a loss to our subsistence. Is the end result a loss to the tax payers? Or is this particular sale going to actually make money? I don't think that there have been such sales in the Tongass recently, didn't the Tongass timber "sales" actually cost the tax payers over 30 Million dollars last year alone?

If these sales are continuing to go ahead so that the government can subsidize the timber industry, I'd like to know why this prejudice exists at the cost to other jobs? There will be a negative impact on many other areas of jobs with these large volume timber sales continuing how they are. Tourism, Guiding, Fishing, Small Scale Manufacturing, etc. Why does the USFS prioritize the timber industry over these other jobs? They claim that these sales are creating jobs...

Point In Fact: The Humpback-Gallagher Sale of 21 million board feet was given away at a price of \$55,000.00 or roughly \$2.58 a 1000 board foot-(the price of a Big Mac) The buyer couldn't make a profit off this thought and was granted, by the USFS, to export it in the round. So there weren't even Alaskan jobs created by this sale!

There is simply NO JUSTIFICATION to these large scale timber sales. The USFS needs to regroup and rethink in this new era of managing the Tongass National Forest. Times are changing and the mind-set of the USFS needs to change too. Think about these COMMUNITY DEVELOPMENT RESERVES and what they could do for everyone involved.

Sincerely,
 Terry Kennedy
 P.O. Box 63
 Tenakee Springs, AK. 99841

Terry Kennedy

1-19-98

FS Response

TK-1 The Decision to be Made and Responsible Official section of Chapter 1 refers to "one or more timber sales." The Proposed Action section below refers to "two or more independent sales." The District Ranger will determine the timing and size of the independent timber sales on the Sitka Ranger District from the volume made available from this EIS Record of Decision.

A "100 year rotation Community Development Reserve" would be a land allocation. Land allocations are determined at the forest land management planning level; therefore this suggestion is outside the scope of this project-specific EIS. A copy of your letter with your suggestion has been forwarded to the Tongass Land Management Planning Team for consideration in the amendment or next revision process. Also, the 1999 TLRMP Record of Decision (1999 ROD) added a standard and guideline increasing the rotation length from 100 years to 200 years.

TK-2 Effects to subsistence resources are in the Chapter 4, Subsistence section. The Purpose and Need section in Chapter 1 explains why we are planning timber management activities in the Indian River Project Area.

The Alaska National Interest Lands Conservation Act (ANILCA) says, in part, "the taking on public lands of fish and wildlife for nonwasteful subsistence uses shall be accorded priority over the taking on such lands of fish and wildlife for other purposes. Whenever it is necessary to restrict the taking of populations of fish and wildlife on such lands for subsistence uses in order to protect the continued viability of such populations, or to continue such uses, such priority shall be implemented through appropriate limitations based on the application of the following criteria:

- (1) customary and direct dependence upon the populations as the mainstay of livelihood;
- (2) local residency; and
- (3) the availability of alternative resources." (Sec. 804).

ANILCA does not establish subsistence as the primary use of Federal land. The Forest Service does not interpret ANILCA to establish priority unless necessity deems otherwise. The Forest Service interprets ANILCA priority setting in terms of the law, as stated above.

FS Response

TK-3 It is impossible to determine whether or not any particular timber volume will be sold at "a loss to the tax payers" or "will make money" prior to the sale.

According to the Forest Service Timber Sale Program Information Reporting System (TSPIRS), the Tongass National Forest had a net revenue of over \$1.2 million in 1996. TSPIRS was developed in 1986 by the Government Accounting Office (GAO) and the Forest Service to track timber sale costs and revenues and report to Congress. The person commenting refers to a Wilderness Society accounting method that determined that the Tongass National Forest lost over \$30 million in 1996. The Wilderness Society accounting method, for example, counts the 25 percent share of timber sale revenues turned over to the States and communities as a cost, rather than a benefit. The Wilderness Society accounting method has not been accepted by the GAO or Congress as a more accurate method.

TK-4 As stated in the Timber Growth and Productivity portion of the Purpose and Need section in Chapter 1, the modified 1997 Forest Plan "allocated approximately 72.2 percent of the land within the Indian River Timber Sale(s) Project Area to the Timber Production Land Use Designation (LUD). The desired condition for these lands, as identified in the Forest Plan, states that they are to be managed for the production of sawtimber and other wood products on an even-flow, long-term sustained yield basis (TLRMP, p. 3-144)."

TK-5 The Humpback-Gallagher Sale bid was the base (minimum) rate of \$2.58 per thousand board feet for 21 million board feet of sawtimber and utility (pulp) timber. The purchaser attempted to locate a buyer for the utility and small sawlog (11 inches diameter and smaller) timber in Alaska, but was unsuccessful due to the Sitka and Ketchikan pulp mill closures. The purchaser submitted a request to the Regional Forester for an export permit based on the lack of buyers for the utility and small sawtimber (the latter are usually pulped due to lack of processing facilities for this type of timber).
(cont.)

FS Response

(TK-5, cont.) The Regional Forester has issued an export permit that gives this sale purchaser the option of exporting no more than 10 million board feet of utility and small sawtimber from Alaska, not 21 million board feet. The remaining 11 million board feet or more of sawtimber will be processed by sawmills in Hoonah. A new export policy was issued on March 27, 1998 that will apply to all new timber sales.

Alaskans will be constructing the roads, falling and decking the timber, transporting the logs to the mills, and processing the logs in the sawmills, therefore this sale creates jobs for Alaskans.

TK-6 Refer to Response TK-1 and TK-2.



United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
1689 C. Street, Room 119
Anchorage, Alaska 99501-5126

ER 97/710

January 22, 1998

Mr. Linn Shipley
U.S. Forest Service
Tongass National Forest, Chatham Area
204 Signakwa Way
Sitka, Alaska 99835

Dear Mr. Shipley:

In response to your November 21, 1997, request, we have reviewed the Draft Environmental Impact Statement (EIS) for the Indian River Timber Sale(s), Tongass National Forest. We offer the following comments for your consideration.

GENERAL COMMENTS

We remain concerned about cumulative effects of this project, when viewed in combination with the other proposed timber sale projects on Chichagof Island, such as Eight Fathom (to the west of the project area), and Kennel Creek (to the north), (Volume II, Appendix A, Table 2, page 8). In addition, previous timber harvests were concentrated in the valleys below 800 feet in elevation where the largest trees typically grow. All of the major drainages in the project area have had harvest within the past twenty years. Therefore, entry now into the project area would put the second growth stands into the same ecological time frame as the 1979 harvest entries. We suggest that that past and planned timber harvesting on private lands adjacent to the project area be identified and included in a cumulative fish and wildlife impact assessment in the Final EIS. In addition, we suggest that a full-island perspective on timber harvest of prior entries (either in acreage or location), and known subsequent entries to this one be included in the Final EIS.

USDOI-1

Alternative C, the Forest Service's preferred alternative, would implement even-aged timber management on 1,526 acres of the highest volume stands at lower elevations and harvest in wildlife travel corridors (Volume I, Chapter 2, Table 2-3, page 25). Only Alternative F proposes more acres (2,031) for even-aged harvest. We believe that even-age harvest methods (primarily clearcuts with green tree retention and patch clearcuts) do not provide suitable vertical forest stand structure, composition, and connectivity at the landscape level (Volume I, Table 3-19, page 3-37). In the Fish and Wildlife Service's (FWS) December 12, 1995, comment letter on the Notice of Intent, they recommended that the Forest Service seek opportunities to utilize alternatives to clearcutting, considering the amount of past harvest in the area. The FWS also recommended that harvest units be located and harvested using methods that would minimize forest fragmentation: that "if clearcuts are used, small units close together are desired compared

FS Response

USDOI-1 Past and planned timber harvest on private lands adjacent to the project area were identified and included in the cumulative fish and wildlife impact assessment in the Draft EIS (See Wildlife section in Chapter 4 and Tables 4-12a and 12b). The private lands adjacent to the project area include lands surrounding the City of Tenakee Springs. A-frame logging occurred during the 1950's on some of these lands that were later selected and transferred to the State. Cumulative effects to fish resources from these past harvest activities are not expected because the activities occurred outside the Project Area watersheds. Adjacent private lands were included in the cumulative wildlife impact assessment. There are no known future timber harvest activities planned on the private lands adjacent to the project area.

Geographic boundaries for the cumulative effects analyses in Chapter 4 were based on where effects occurred in relation to the Project Area, how big or small the effects were, and how long the effects lasted. A full-island analysis on timber harvest is not necessary because, for example, timber harvest activities on southern Chichagof Island would not be expected to have any measurable effect on the Indian River Project Area or vice-versa. The wildlife cumulative effects analysis has been updated and clarified to include new information. The narrative now lists all of the timber sale projects that are included in the cumulative effects analysis.

USDOI-2 All of the action alternatives comply with the standards and guidelines for reserve tree/cavity nesting habitat (modified 1997 Forest Plan, page 4-117, XIV. A.1. a)-e), American marten (modified 1997 Forest Plan, pages 4-118-119, XVI.2. c) (1-6), d), and landscape connectivity (modified 1997 Forest Plan, page 4-120, XVIII, A. 1.-2.). The intent of these standards and guidelines is to protect or manage these different resources.

USDOI-2

to scattering large harvest units.” The scattering of large harvest units creates more forest edge and increases adverse impacts on interior forest species sensitive to edge effects. We remain concerned that this timber sale proposes to continue emphasis of even-aged (clearcut) timber management, which would further reduce wildlife habitat and biodiversity.

We are also concerned about further forest habitat fragmentation, particularly in relation to long-term species viability. Although old-growth reserves have been established in the project area, we believe it is important to manage the highly fragmented forested areas between them in such a way that the old-growth reserves do not become isolated patches that cannot sustain old-growth dependent wildlife populations.

We believe natural fragmentation must be clearly understood before further management-induced fragmentation can be properly evaluated (Kiester and Eckhardt 1994). Habitat connectivity is an important component of a landscape conservation strategy (Kiester and Eckhardt 1994, Lidicker 1995). Corridors of undisturbed habitat connecting the various non-development Land Use Designations (LUDs) containing old-growth stands allow movement of animals between these increasingly fragmented islands of habitat. Therefore, we suggest maintaining connectivity between small old-growth reserves and other natural settings in Ten Mile Creek drainage (which is the area of highest concern), Value Comparison Unit (VCU 2221), Freshwater Creek drainage (VCU 2160), and Indian River drainage (VCU 2200), and that these be discussed in the Final EIS.

Two fisheries enhancement projects are proposed for Indian River on page 2-23, Volume 1. We recommend the Final EIS include the application of riparian and bear buffer standards and guidelines to this section of the river. The added riparian and bear buffer will provide resource protection along 8-10 miles of Indian River. Because of bear foraging behavior, channel characteristics, and adjacent landform, state biologists have identified this stretch of river as providing probable important feeding sites for brown bear. Implementation of these projects would enhance the anadromous fishery of the river.

We suggest that the Final EIS include a map showing old-growth reserves, in and near the project area, to simplify review.

The Draft EIS states that northern goshawks are known to inhabit the project area. The FWS recommends continuing annual goshawk surveys in all units included in the proposed or selected alternative, until harvest in those units is imminent. Units where goshawk nesting is confirmed should be dropped, deferred, or modified to meet the appropriate 1997 Tongass Land Management Plan (TLMP) standards and guidelines referred to in Volume 1, Chapter 4, page 28. This should be discussed in the Final EIS.

The FWS recommends against publication and public distribution of maps showing known goshawk nest sites with the Final EIS. Depictions of circular nest buffers on such maps could potentially result in nest vandalism.

FS Response

USDOI-3 The 1997 TLRMP EIS and 1999 TLRMP Record of Decision (1999 ROD) addressed the issue of forest fragmentation in relation to long-term species viability with the old-growth habitat strategy. See 1997 TLRMP Final EIS, Appendix N, and the 1999 ROD, pages 10 and 50-53.

USDOI-4 Habitat connectivity is maintained and was addressed in Chapter 4, Wildlife Section under Other Aspects of Population Viability. Connectivity was also addressed by the 1997 TLRMP EIS and 1999 ROD with the old-growth habitat strategy.

USDOI-5 The bear buffer reference you refer to is in the modified 1997 Forest Plan, page 4-114, VI. Bear Habitat Management, B. Important brown bear foraging sites as defined in this reference are small sites, such as waterfalls used as fishing sites, not entire stretches of river. There are no timber harvest units within 500 feet of the waterfalls where the enhancement project is planned. All of the preferred alternative (Alternative C) timber harvest units in the Indian River drainage are further than 500 feet from the river.

USDOI-6 Old-growth Habitat Land Use Designations (LUDs) are displayed in Figure 1-2, Map of LUDs. All of the Project Area LUDs are displayed on this map. The modified 1997 Forest Plan Revision Map displays all of the LUDs for the Tongass National Forest.

USDOI-7 Surveys are planned this year in those units where goshawks are suspected of nesting or inhabiting. The modified 1997 Forest Plan standards and guidelines for goshawks and their nests will be implemented whenever and wherever they are located. Nest buffers and nests are not displayed in the EIS and there are no plans to display them.

USDOI-8

Marbled murrelets typically are associated with mature, old-growth forest that provide one or more critical elements of their life requirements. The proposed project (Alternative C), would result in loss of 1,856 acres of habitat, and may, in combination with past harvests, have significant impacts on this species on northeast Chichagof Island.

USDOI-9

The Draft EIS addressed existing Log Transfer Facility (LTF) bark accumulation depths at Sunny Cove in Chapter 3, page 60. We suggest that a mitigation plan be included in the Final EIS identifying what actions would be taken if bark accumulation is found to eventually exceed the Alaska Timber Task Force LTF guidelines. We suggest this plan include bark removal, established time-frames, and proper disposal of solid waste materials associated with the LTFs.

SPECIFIC COMMENTS

USDOI-10

Chapter 1, page 3, paragraph 7, second sentence: We suggest that the sentence structure be changed to read "all forested areas within this Land Use Designation have attained old-growth forest characteristics..." Delete the word "will."

USDOI-11

Chapter 1, page 19, paragraph 4: The Draft EIS states that the Forest Service met with "representatives from the interagency implementation team" on September 23, 1997, and October 10, 1997, and listed the FWS as a member of that team. The FWS is unaware that such a team had been established on those dates. However, FWS representatives did meet with members of the Indian River project planning team on September 23, 1997, and the agenda at this meeting included discussions on how the project would specifically meet the Northern Goshawk, American Marten, Endemic Terrestrial Mammals, and landscape connectivity standards and guidelines. Discussions did not include any other wildlife standards and guidelines contained in the recently revised TLMF. In addition, referring to these standards and guidelines as "the new wildlife standards and guidelines" may be confusing to the public, as all the standards and guidelines contained in the revised TLMF are "new." We suggest the Final EIS relate this nature of the meetings.

USDOI-12

Chapter 2, pages 8-11: We suggest that "levels of biodiversity" be defined in the Final EIS. Acres of harvest by even-age methods (1,526 acres, Alternative C), does not, we suggest, define a level of biodiversity. Table 2-3, page 2-25, compares planned actions by alternative and summarizes volume, acres of timber harvest, logging systems, harvest methods, and proposed roads. We believe that this format does not adequately analyze and portray the effects of each alternative on the project area or Chichagof Island biodiversity. Biodiversity is a function of more than just an alteration of plant communities found within an area covered by a project plan. We suggest that the Final EIS include a variety of life forms, complexity of species and processes, communities, genetic consequences, and ecological functions (interacting system of organisms considered together with their environment) in an analysis, by alternative, for addressing levels of biodiversity. Some level of expected biodiversity (i.e., high, medium, low), could be derived from such an analysis.

FS Response

USDOI-8 The Biological Assessment and Biological Evaluation (Appendix B) includes a discussion of marbled murrelet distribution and populations, determination of effects, cumulative effects, and a finding that "this project may impact individuals, but is not likely to result in a trend toward federal listing or loss of viability." See also Response USDOI-3.

USDOI-9 A mitigation plan will be developed in cooperation with Federal, State, and other agencies if, and when, bark accumulation exceeds the Alaska Timber Task Force LTF guidelines.

USDOI-10 The sentence has been re-worded as suggested.

USDOI-11 This paragraph has been rewritten in the Final EIS.

USDOI-12 Chapter 2 of the Draft EIS "summarizes the key elements needed by the decision maker" (Draft EIS, page 2-1). Chapter 4 discusses biodiversity impacts in the Vegetation section. This discussion follows the Biodiversity section of the 1997 TLRMP Final EIS (pages 3-11 to 3-39). The 1999 TLRMP Record of Decision (1999 ROD) stated, in part, that implementation of the decision "will maintain the diversity of plants and animals" (page 57). Additional information regarding biodiversity may be found on pages 50-51 of the 1999 ROD.

USD01-13	Chapter 2, page 15, paragraph 5: We believe that direct and indirect effects on fish habitat would occur in all action alternatives, i.e., disruption of fishing activities during logging operations. The effects on fish habitat and water quality would be both direct and cumulative due to previous riparian harvest along forested channels. We believe that the Final EIS should include a cumulative impact assessment for fish habitat.	FS Response	
USD01-14	Chapter 2, page 16, last paragraph: We suggest that the Final EIS note that camps located outside the project area will also decrease likelihood of confrontations with brown bear.	USD01-13	See the first section in response USDOI-12. In addition, the Soils, Water, and Fish sections in Chapter 4 have been clarified to display additional information.
USD01-15	Chapter 2, page 24, Monitoring: We suggest the Final EIS include a multi-agency approach to field monitoring. The FWS requests involvement in monitoring activities.	USD01-14	There is potential for human/brown bear confrontations wherever camps are located. Mitigation measures designed to reduce this potential are included in Appendix C.
USD01-16	Chapter 2, page 26, Table 2-4: Based on the landtype association descriptions provided in Volume II, Appendix H, we believe that the old-growth associations of alpine/subalpine and brushfields should not be classified as old-growth (habitat-type) acres. We suggest that the acres shown for these two categories be deleted from the old-growth section of the table in the Final EIS.	USD01-15	The 1999 TLRMP Record of Decision (1999 ROD) says, in part, "We will work with the U.S. Fish and Wildlife Service and other Federal agencies to further review whether the Forest Plan's old-growth strategy is adequate..." (1999 ROD, page 48). Multi-agency project monitoring can be accomplished through Memorandums of Agreement at any time for any aspect of the monitoring plan. See Appendix C for the project monitoring plan.
USD01-17	Chapter 2, page 26, Table 2-4: This table does not include estuaries and beaches as a landtype association as do other sections of the Draft EIS, such as Chapter 3, page 5, Table 3-1a; Chapter 3, page 7, Figure 3-2; Chapter 3, pages 20-21; and Appendix H. We suggest the Final EIS correct these inconsistencies.	USD01-16	Although the descriptions in Appendix H make it appear that alpine/subalpine and brushfields do not have any trees, they actually are a mosaic that includes clumps and pockets of commercial timber. Acres displayed in Table 2-4 in the Old-growth % Remaining section are forested acres. The alpine/subalpine and brushfield ecosystem classifications are displayed here to show that impacts, small as they are, will occur as a result of implementing any of the action alternatives.
USD01-18	Chapter 3, page 29, Brown Bear: We believe that known bear denning activity that occurs in VCU's 2160 and 2041 needs to be mentioned in the Final EIS. We suggest that the Final EIS include an analysis of impacts the proposed project may have on critical bear denning habitat and what protection would be provided for it. The analysis also needs to address road access and associated impacts on bear denning.	USD01-17	Table 2-4 displays a summary of the effects on various resources by alternative, such as old-growth acres remaining in different landtypes. The Affected Environment Table 3-10 displays Acres of Productive Old-growth Forest in 1994 by Landtype Association. Acres for Estuaries/Beaches is zero (0); so there is no effect by the alternatives.
USD01-19	Chapter 4, page 19, Suitable Habitat and Management Indicator Species and Table 4-14: We suggest that clarification is needed on which models were used for suitable habitat determinations. The Sitka black-tailed deer model is the only model that was updated to incorporate high, medium, and low volume strata in the 1997 TLRMP. This is the only model currently available to generate project area habitat capability estimates. Use of pre-1997 TLRMP models is not state-of-art for project level evaluations and is not statistically valid because models are based on volume classifications used in previous planning efforts. None of these models, including the Sitka black-tailed deer model, should be used to estimate actual populations. We suggest an interagency peer review of any modifications made to existing models.	USD01-18	The analysis in the Wildlife sections of the EIS refers to "acres within occupied brown bear habitat" that include denning habitat. It is very likely that brown bear denning occurs in all VCUs, not just VCUs 2160 and 2140. The term "critical bear denning habitat" does not appear in the TLRMP. The 1997 TLRMP Final EIS analyzed impacts to brown bears and their habitats on pages 3-415 to 3-420. It identified riparian habitat as one of the more important elements of brown bear ecology. The old-growth habitat strategy and brown bear standards and guidelines (TLRMP, VI. Bear Habitat Management, A.1-6., B.-E., pages 4-113 and 4-114) were designed to ensure future viability of brown bears.
USD01-20	Appendix J, Unit Cards, Unit 21010, VCU 2221: Old-growth reserves have been utilized to provide biodiversity components of flora and fauna and to maintain habitats for old-growth dependent species. Based on review of map packets and old-growth reserve overlay, it appears that unit 21010 is within an old-growth reserve. We suggest that this unit (16.1 acres), be	USD01-19	

USDOI-20
(cont.)

dropped from the unit pool in the Final EIS to comply with Alternative Development prescriptions in found in Chapter 2, page 1, paragraph 6 and the Old-Growth LUD management prescriptions in TLMP.

USDOI-21

We request copies of the completed Indian River Wildlife and Timber Resource reports to be sent to: U.S. Fish and Wildlife Service, Southeast Alaska Ecological Services, 3000 Vintage Blvd., Suite 201, Juneau, Alaska 99801-7100.

We appreciate the opportunity to review and comment on the Indian River Timber Sale(s) Draft EIS. Please contact Richard Enriquez, FWS, at (907) 586-7240, extension 223, if you need clarification of these comments or have questions.

Sincerely,



Paul D. Gates

Regional Environmental Officer - Alaska

FS Response

USDOI-19 The 1997 TLRMP Final EIS deer model was used in the Wildlife and Subsistence analysis (See the Sitka Black-tailed Deer portion of the Chapter 3 Wildlife section). Table 4-14 does not display habitat capabilities; it displays acres of management indicator species suitable habitat. This suitable habitat discussion follows the format found in the 1997 TLRMP Final EIS. Actual populations of wildlife species are not estimated in this EIS. The model modifications referred to here were done in consultation with wildlife biologists on the TLRMP Planning Team in order to show the expected reduced effects of partial harvest methods versus clearcut harvest methods.

USDOI-20 The GIS Old-growth LUD layer that we received from the TLRMP Planning Team contained a mapping error. The intent was to locate the small habitat conservation area in the 10-Mile Creek area so that Unit 21010 was outside the HCA boundary. The GIS Old-growth LUD layer has been corrected to move the boundary so that Unit 21010 is outside the HCA. The HCA still meets the criteria for small HCA size, location, and composition (Appendix N, page N-21 and N-29).

USDOI-21 Copies of the Indian River Wildlife and Timber Resource reports will be sent to your office.

LITERATURE CITED

Kiester, A.R. and C.Eckhardt. 1994. Review of wildlife management and conservation biology on the Tongass National Forest: A synthesis with recommendations. Pac.NW Research Station, Corvallis, OR.

Lidicker, W.Z. ed. 1995. Landscape approaches in mammalian ecology and conservation. Univ. Minnesota Press. Minneapolis.

I attended and testified at the Indian River Sales Draft EIS hearing in Tenakee Springs on January 13th. This is a time of year when many folks are out of town but the mid-winter the hearing was attended by several residents and four city council members.

I commented briefly and primarily on Heritage Resources of the area. I listened while my family, friends and neighbors spoke with knowledge, conviction, and concern. "Distrust", "insult", and "deceit" and were words used frequently by many who testified. Concern was expressed that the Draft was inadequate, incomplete and poorly written.

A great deal of consternation centered around the treatment of an important document, the Sunny Cove MOU. It was felt that this MOU which had been exceedingly painful for community members to negotiate and vote on had not been represented in the Draft EIS. Select portions of the MOU were omitted and the community interpreted this as intentional. The fact that Alternatives were created to disregard this MOU is hard to get around. Based on the MOU with Tenakee, Alternatives that include Sunny Too and/or Ten Mile should never have been presented as options.

I do not think the Purpose and Need of this sale is believably demonstrated in this Draft. I also think the effects on wildlife habitat require a more detailed study.

For reasons cited above, I support the no action, Alternative A.

Vicki Wisenbaugh
PO Box 512
Tenakee Springs, Alaska 99841
1-907-736-2243
e-mail: wisentenakee@juno.com

VW-1

VW-2

VW-3

VW-4

FS Response

VW-1 Comment noted.

VW-2 Refer to Response ES-4.

VW-3 Comment noted.

VW-4 Effects on wildlife habitat are presented in the Wildlife section, Chapter 4.

FS Response

WL-1 Comment noted. Timber management activities would occur three to six miles from Tenakee Springs, depending on the alternative.

WL-2 The number of acres harvested by even-aged (clearcut with green tree retention, overstory removal, and patch clearcut) and uneven-aged methods (group selection and single tree selection) are displayed in Table 2-3.

"Foreign needs" are discussed in the Market Demand portion of the Purpose and Need section in Chapter 1 as factors (international timber markets and world-wide timber supplies) influencing demand for Tongass timber.

WL-3 Domestic market demand analysis was based on Morse 1998 (See References Cited section in Volume I for full citation).

WL-4 Comment noted.

WL-5 Timber volume made available under this EIS Record of Decision will be advertised for qualified bidders. As long as they are qualified, they may come from anywhere. Timber volume is also currently available for qualified bidders in the Ketchikan area.

WL-6 No.

WL-7 Refer to Response WL-1.

POB 2070 Le
Gunnear, AK 99802
Jan. 13, 1998

Dear Folks:

This is about the unconscionable idea of a Timber Sale-Cut, according to Forest, within 3 mi of Tenakee. Of course residents of Tenakee & those who use-enjoy that area do not own those trees any more than the residents of Florida do, but all Americans own them.

Let's not forget a few things:

1. We don't need to clear-cut our forest to accommodate foreign needs.
2. Domestic market demand is questionable.
3. No one has a right to cut unnecessary timber to make a living; there are enough other ways.
4. Are Ketchikan & their cutters & processors running out of timber in their own back yard, so they have to expand in ours?
5. Are you intimidated by Sen. F. Murk & his ilk?

Let's slow down the destruction & make it more selective & sensible -- & stop the "backyard" clearcuts.

Sincerely, Ward Paul

WL-1

WL-2

WL-3

WL-4

WL-5

WL-6

WL-7

PO Box 55
Tenakee Springs, AK 99841
16 Jan 1998

USDA Forest Service
Indian River Planning Team
204 Saginaka Way
Sitka, AK 99835

Dear Planning Team:

I would like to thank the folks who made the recent trip up to Tenakee for your hearing on the Indian River Project. Mr. Shipley in particular, was most patient and informative in fielding questions regarding both the specifics of the proposed project and general Forest Service policy.

Overall I was disappointed by the quality of the DEIS. The document is riddled by numerous shortcomings. Numbers don't add up; internal consistency is lacking; sources are omitted or mislabeled; many discussions are either incomplete or one-sided. By some glaring oversight, the DEIS fails to mention to full terms of the MOU with the City of Tenakee Springs. In clear violation of the spirit of this agreement, three of the five action alternatives include a LTF site other than Sunny Cove. I expected a report prepared by 40 persons with 547.5 years cumulative Forest Service experience to have more substance. The unclear style made it sometimes difficult to discern the actual content; so I apologize if I have somewhere misinterpreted the information presented.

Beyond this, I would like to offer the following objections to the action proposed, as I understand it from the DEIS.

1) **Incomplete statement of purpose and need.** The report fails to bring forward any compelling reasons for the project.

The discourse on timber productivity cites hemlock infection as a reason for the project, contending that harvest activity will result in a healthier forest through species conversion. The discussion would seem to contradict itself, for in almost the same breath it has recognized disease processes as playing "a key role" in old growth forest. Moreover, while emphasizing increased growth rates, the dialogue is silent on the issue of the associated product quality decline. Finally, it ignores evidence presented elsewhere in the DEIS that questions the outcome of this species composition re-engineering.

The second identifiable reason is the TTRA mandate to meet market demand. Yet critical facts are overlooked in analysis of the market report. For example, KPC was included when determining the current market situation, but their 300 mm bf allocation was conveniently disregarded when figuring the existing 3-year timber supply. Also the Forest Service has apparently failed to monitor Native Corporation operations to determine whether any of the market's demands are being met from private sources. The conversation also refers to the need to maintain infrastructure despite the reality that some alternatives close the road system anyway, thus revealing the artificial nature of this "need."

The third rationale for the project is local employment in wood product industries. The entire report is vague on what it considers to be local communities. Nowhere is any information presented to indicate that the project would benefit local employment, either in the purpose and need section or the body of the statement. Virtually all comments on jobs created by the project are in a regionwide context.

2) **Wildlife habitat "modification."** Despite DEIS language to contrary, I do not find the level of habitat destruction to be acceptable. I do, however, find the Management Indicator Species approach to be almost laughable in light of the near complete lack of data about these species. The marten sections are particularly flawed. Ignorance of availability of the Hoonah road system for trapping leads the report to underestimate the impact of further habitat loss on marten. In addition, it fails to identify the dubious nature of information acquired from ADF&G. This section should be seriously re-evaluated. The deer finding is inadequate in that it neglects to address how different

FS Response

ZS-1 While disease and decay processes are a natural part of forest ecosystems, the effects of these processes will be reduced in regenerated timber stands (second growth) within Timber Production LUDs.

ZS-2 The Purpose and Need section of an EIS addresses what we are trying to accomplish and why we need to do it; the rest of the document will talk about impacts, such as "product quality decline." "Product quality decline" was discussed in the Chapter 4 Timber, Long-term Productivity section of the Draft EIS.

ZS-3 As stated above, the Purpose and Need section of an EIS addresses what we are trying to accomplish and why we need to do it.

ZS-4 The actual Tongass Timber Reform Act (TTRA) language says, "seek to provide a supply a timber from the Tongass National Forest which (1) meets the annual market demand for timber from such forest and (2) meets the market demand from such forest for each planning cycle." See Appendix A for the latest market demand figures.

ZS-5 Refer to response ZS-4 above; the TTRA market demand requirements refer to the Tongass National Forest, not private sources. In addition, timber from private sources will not meet the annual market demand because the majority of their wood is shipped overseas to foreign countries as round, unprocessed logs. National Forest timber cannot be shipped overseas unless it has had at least primary manufacture or an export permit has been issued.

ZS-6 Even if roads are closed to motorized vehicle traffic, they still require some level of maintenance to prevent loss of investment and reduce potential resource impacts.

ZS-7 The number of direct and indirect jobs is displayed in Table 4-38 in the EIS. Reference was also made to the possibility that some residents of Angoon, Hoonah, and Tenakee Springs may be hired for timber harvest and road construction activities in the Community Effects portion of the Economics and Social Values section in Chapter 4. There are too many unknowns to predict how many people from each community may or may not be hired for any of the timber sales coming out of this project.

FS Response

- ZS-10 (cont.)** alternatives will affect the probability of a subsistence restriction, not to mention the likely severity of the restrictions (my attached comments elaborate somewhat on these points).
- ZS-11** 3) Local economic impact. Misleading information is presented on this topic. At one point, an 18% decrease in tourism is said to reflect only a 2% decrease in revenue. Nor does it appear to recognize the potential impact of road system closure on local businesses. While harping on this sale's ability to bolster the economy regionally, its impact locally is trivialized. And finally, the loss of wildlife habitat is not analyzed in terms of its economic effect on local trapping efforts.
- ZS-12** 4) Economics of the project. Financial mumbo-jumbo in the report conceals true costs to the Forest Service. By muddling USFS and operator costs, this discussion obscures the true extent of the wastage of government funds. The ranking of alternatives in Table 4-22 is incomplete by omission of Alternative A. In concentrating on cost per unit, the report further masks reality; the alternatives with the most efficient cost per unit, by harvesting so many units to achieve such efficiency, result in the greatest total cost (as noted in my attached comments on Chapter 4, pp35-36). When considering the economics of harvest on either basis, the No-Action alternative receives the highest ranking!!
- ZS-13** In light of the above points, I respectfully suggest Alternative A be implemented. If in the future, timber economics improve to the point where harvest could really be conducted on a cost-effective basis, I hope this could be done without damaging the habitat in the 10-Mile area, which in my opinion is more valuable than Game Creek or upper Indian River. Furthermore, I hope that operations at that time would only build temporary roads, to be removed upon project completion.
- ZS-14** I welcome any feedback you might have to my comments. I would also like to request a full copy of the Final Environmental Impact Statement and Record of Decision whenever these items are released.

Thank you for listening.

Sincerely,

Zeb Strong
Zeb Strong

ZS-8 Comment noted.

ZS-9 The marten sections in the EIS have been updated, clarified, and corrected to display more accurate information and identify where the information came from.

ZS-10 The probability of restrictions on subsistence uses was summarized in Table 4-24 by alternative. Severity of potential restrictions was not discussed because the type (or "severity") of restriction(s) will be determined by the Federal Subsistence Board on a case-by-case basis as required by ANILCA. Some examples of types of restrictions were included the Resource Findings portion of the Subsistence section in Chapter 4 of the Draft EIS.

ZS-11 Refer to Response ZS-124.

ZS-12 Refer to Response ZS-123.

ZS-13 ADF&G reported that marten are the only furbearers harvested in any quantity in the Indian River Project Area. The Draft EIS displayed that only 82 marten were trapped from the Project Area from 1990 to 1995 by fewer than five trappers. This figure has been updated to reflect the most current information. Prices for marten hides from the Project Area vary widely, from zero (see Response ZS-111) to approximately \$100 per hide. Economic impacts to local trappers would vary correspondingly.

ZS-14 The Economic analyses were accomplished in accordance with Forest Service policy and direction. Alternative A, the No Action alternative, is not shown because there are no harvest volumes, no timber values, and no costs to an operator to display. In this analysis, no value is not "better" than a positive or negative value.

ZS-15 Comment noted.

ZS-16 Your name and address have been added to the mailing list for the Final EIS.

The following comments I have compiled in order of appearance in the DEIS document.
Abbreviations: Chapter (C), Page (p), Paragraph (P), Table (T), Tenakee (TKE), Hoonah (HNH), Angoon (ANG).

Chapter 1

p3-P8 (also C1-p4-P1): One part of purpose and need statement is discussion of species composition of forest and how clearcutting can "encourage the growth of Sitka spruce and yellowcedar," and "will more likely provide favorable conditions for spruce and cedar regeneration." This speculation is dampened later though. C4-p32-P3: "...any one of the action alternatives would not result in a major effect on species composition," and "over the entire area of harvest the changes would be minor." C2-p21-P3, discussion of handplanting also leads one to believe FS policy will be to "maintain a timber stand's current species composition." Undermines the purpose and need emphasis on re-engineering forest composition. In light of the admission that disease and decay play important role in OG forest, it appears that you have not established the need to eradicate mistletoe infection.

p4: Does 3 yr. estimate of 399 mmmbf demand (P4) include KPC in calculation? Discussion (intentionally?) unclear. If so, what is 3-yr estimated demand w/ KPC out of picture, since they already have their 300 mmmbf locked up? Also, are markets for private timber (i.e. native lands) considered in the 399 mmmbf estimate? And is this demand contingent upon selling at prices below -\$160/mmmbf (see Table 4-22)? Is the Forest Service mandated to create market demand or simply to meet it?

p4-P7: Chatham Area expected to contribute a maximum of 51 mmmbf/year for 10 years = 510 mmmbf over 10 years. Alt C contributes 28.7 mmmbf toward this goal. C1-p5-P3 says Chatham area has an additional 174 mmmbf undergoing NEPA analysis and another 316 mmmbf anticipated over the next 10 years. This totals 518.7 mmmbf which by my math exceeds the MAXIMUM expected contribution from this area.

p21-P3: Meaning of "local." Which local communities are timber dependent? Is Ketchikan local? Wrangell? HNH? Does "community" mean permanent community or temporary logging camps? Is Whiststone camp a local community?

p21-P7: I wonder whether "acres by Recreation Opportunity Spectrum classification" is a unit I wish to be used in measuring project impact on social values.

p21-P9: Habitat capability models adjusted for both marten and deer, not just deer (C4-p19)

p22: Small timber sales: Timber sales of the size mentioned currently available without additional "road construction and reconstruction." Also, if roads closed as they may be, there would not be "increased access." Need to present both scenarios.

Chapter 2

p2-P6: "very little known about...ultimate success of...uneven-aged management in SE AK." How much is known about "success" of even-aged management? And how is success even measured?

p4: How much of the 10% is to be snags and how much green tree? Could it all be snags? How large need these green trees be? How is the 10% to be measured? Volume, acreage, or otherwise? The unsubstantiated analogy to "large, intense wind event[s]" leaves me skeptical. Where locally has wind blown down 90% of trees over such a large area? C3-p22-P1 says most blowdowns are 3 or fewer trees, not entire clearcuts. Falls to discuss how pattern of trees left affect marten.

p5: What makes "significant large tree component, snags, and large down woody material" so important? Isn't snow interception one of the most important attributes of OG forest (performed by overstory)? What are likely "tree diameter limits" for this project? Are there really any areas where maximum diameter limit would be implemented?

FS Response

ZS-17 Comment noted.

ZS-18 The quote and resulting conclusion regarding hand-planting and timber stand species composition have been taken out of context. The sentence actually says, "Hand planting may be necessary or desirable when a natural source of seed for a desired species is inadequate to maintain a timber stand's current species composition, or when it is desirable to reduce the time needed for natural regeneration." There is nothing in this sentence regarding Forest Service policy on hand-planting or timber stand species composition.

ZS-19 The Purpose and Need section in Chapter 1 of the Draft EIS referred to "minimizing losses due to insects and diseases that are species specific," such as dwarf mistletoe. There is no mention of eradicating mistletoe infection in the Purpose and Need section.

ZS-20 KPC is part of the demand calculations because they own and operate sawmills in Southeast Alaska. Projected annual sawlog demand under the medium economic scenario for the next 10 years is 133 mmmbf. The 399 mmmbf refers to the volume the Forest Service intends to have under contract each year; not a 3 year estimate of demand. See Appendix A for the latest market demand figures.

Markets for private timber (i.e., Native Corporation lands) are not considered in the 399 mmmbf; this figure refers to the volume the Forest Service intends to have under contract each year (See above).

Market demand is not contingent upon selling at prices below -\$160/mmmbf.

As stated in the Market Demand portion of the Purpose and Need section in Chapter 1, "Section 101 of the Tongass Timber Reform Act (TTRA) directs the Forest Service to 'seek to provide a supply of timber from the Tongass National Forest which (1) meets the annual market demand for timber from such forest and (2) meets the market demand from such forest for each planning cycle'."

ZS-21 These figures have been revised and updated to display the current situation. See Appendix A for additional information.

FS Response

ZS-22 For purposes of this EIS, Angoon, Hoonah, and Tenakee Springs are the local communities that were discussed in the Economics and Social Values sections in Chapters 3 and 4. Hoonah is more dependent on timber than Angoon or Tenakee Springs. The term "community" does not include temporary logging camps. The 1997 TLRMP EIS (Pages 3-681-685) and this EIS did not consider the Whitestone logging camp a community in the same sense that Hoonah or Tenakee Springs are communities.

ZS-23 As shown in the EIS, we used acres by Recreation Opportunity Spectrum classification as one of the units of measure for effects regarding social values. No other unit of measure was offered or considered.

ZS-24 The Note in Issue Area 7 is accurate as stated. There is currently no marten habitat capability model that has been accepted by all of the interagency modeling task force members. The marten suitable habitat model was adjusted to reflect effects from partial harvests.

ZS-25 Timber sale roads provide access to harvest units. "Closed roads" are closed to motorized vehicles during the time they are not used for timber management activities. If a small sale or salvage sale occurs, the road can be opened to motorized vehicles and equipment.

ZS-26 The Tongass National Forest has over 40 years of success regenerating even-aged management stands. The National Forest Management Act requires that harvest areas are to be restocked within five years of final harvest. Harvest areas are monitored and the results are documented in the Tongass National Forest Annual Monitoring and Evaluation Reports.

FS Response

ZS-27 The modified 1997 Forest Plan standard and guideline for marten habitat (page 4-119) reads as follows:

- (1) Retain approximately 10-20 percent of the original stand structure.
- (2) An average of at least 4 large trees/acre (20-30" DBH or greater) for future snag recruitment. Where not available substitute the next largest trees.
- (3) An average of at least 3 large decadent (dead or dying) trees/acre (20-30" DBH or greater). Where not available substitute the next largest decadent trees.

The 5 to 10 percent remaining in units will be measured by the percentage of canopy left in the unit.

The ECO Team documented areas of windthrow over 100 acres in size near the mouth of Indian River.

This portion of the EIS describes different harvest methods; it was never intended to describe how the different methods affect marten or any other resource. Effects are discussed in Chapter 4.

ZS-28 As stated in the description, large trees, snags, and large down woody material are important attributes of old-growth forests, which is important to many wildlife species. Snow interception may also be an important attribute of old-growth forest. The Silviculture section of the Unit Card usually includes the tree diameter limits. Tree diameter limits ranged from 16 to over 20 inches in diameter. We are not aware of any areas where maximum diameter limit would be implemented.

FS Response

ZS-29	p7: More accuracy in naming silvicultural systems could be easily achieved. I suggest "four to eight tree selection," or "small clump selection."	
ZS-30	p8-P5: Claim is that under Alt A "existing timber-related jobs would not be sustained." Need to show they wouldn't be sustained elsewhere. And wouldn't the "tree-thinning" jobs mentioned be considered a "new opportunity" for timber-related jobs?	ZS-29 Comment noted.
ZS-31	p11-P1: Claims is Alt E "harvest(s) the smallest amount of volume." Not when compared to either Alt A or Alt D (0 mmBf and 24.0 mmBf vs. 24.5 mmBf; 0 acres and 1586 acres vs. 1665 acres). See T(2-3).	ZS-30 This section of the EIS describes the alternatives considered in detail for this project. Effects, such as the number of jobs generated, are displayed in Chapter 4 at the project level. Tree thinning would be considered a new opportunity for timber related jobs; however, this activity usually takes place 15 to 20 years after harvest so it does not play a major role in the economics analysis in the short term.
ZS-32	p15-P6: Habitat loss "effects reduced to acceptable levels." Not to many TKE residents.	ZS-31 Timber volume estimations have been recalculated and corrected in the EIS.
ZS-33	p16-P9: Fails to address concern for trapline competition. Also doesn't really address concern for deer competition when you consider TKE hunters utilize most of the inlet, certainly as far as Seal Bay.	ZS-32 Comment noted.
ZS-34	p17-P5: "Implementation of any of the alternatives is not expected to have any major impacts on the economics of the local communities [emphasis added]." Doesn't this undermine claims made in the statement of purpose and need.	ZS-33 Now that the concern has been raised, a discussion on trapline competition has been included.
ZS-35	p21-P4: Is it precommercial or postcommercial thinning? Truth in advertising please.	The Tenakee Springs Subsistence Deer Hunting Area map in Appendix F displays where the community obtains 90 percent of their deer. There will be competition for deer from residents of Tenakee Springs, logging camps, and all of the other communities in Southeast Alaska. The point here is that logging camp residents are less likely to hunt deer in the Project Area if their camp is located outside the Project Area.
ZS-36	p2-P6: "The ecosystem approach works well where there is inadequate knowledge..." Pure conjecture should be labelled as such.	ZS-34 Key phrase here is "major direct, indirect, or cumulative impacts on the economics of the local communities and their residents." The Purpose and Need said the project would "contribute" to their economics.
ZS-37	p3-P1: "In this assessment, both approaches [coarse and fine filter] were used." But C3-p4-P7 says "since individual species cannot be tallied, the coarse filter approach is used." Is it one or both?	ZS-35 "Precommercial thinning" as it applies to this EIS is defined in the Glossary. "Postcommercial thinning" is not a silvicultural term used in this EIS.
ZS-38	p3-P6: "data is not available which would support a complete listing of species for the analysis area." Does this lack of data reflect on the credibility of the Threatened/Endangered species section as well as the Management Indicator Species?	ZS-36 Comment noted.
ZS-39	p8-P5: If salable minerals are used for road construction as suggested, are they being sold? With USFS paying for such construction, are you proposing to sell these minerals to yourself? "Salable" sounds like a misnomer here.	ZS-37 This section has been clarified to say that the coarse filter approach was used to manage and conserve habitats and the fine filter approach used in the management and conservation of specific species, such as Region 10 sensitive plant species.
ZS-40	p8-P7: Only one cave mentioned in Ind River Proj Area. But C3-p46, T(3-24) shows cave exploration occurring in 3 VCU's. How is this when there is only one potentially sig. cave? What happens if the Forest Supervisor determines the cave is not significant? When is the determination scheduled to be made? (see too C4-p3-P4, C4-p83-P1)	
	p9-P3: Areas of high karst vulnerability to be removed from forest land base. But C4-p4-P's 2 and 3 say high vulnerability karstlands will be logged. Reconcile.	
ZS-41	p10 & 11: Landslide discussion focuses on wrong aspect. Should consider # of events and acreage affected as a %age of area (cut or uncut), not in total.	
ZS-42	p12, T(3-6) shows 4 "road sites w/ erosion" in Indian River. But p17, T(3-9) shows 6 "washout sites" on Ind. Riv Rd. huh...	
ZS-43	p15, T(3-7) shows a total of 41.7 miles Class I and II streams in Freshwater Creek area. However, p16-P6 says "There are 47 miles of Class I and II stream segments in the Freshwater Creek watershed." Similar inconsistency between p16-P5 and Indian River information from T(3-7).	
ZS-44	p18-P4: What %age of Proj. Area is projected as having extreme mass movement hazard? very high hazard? high	

Chapter 3

FS Response

ZS-38 No. See the Threatened, Endangered, and Sensitive Species sections in Chapters 3 and 4, the Biological Assessment and Biological Evaluation in Appendix B, and the Management Indicator Species portions of the Wildlife sections of Chapters 3 and 4 in this EIS. Also see the 1997 TLRMP Final EIS for additional information regarding Threatened and Endangered Species (pages 3-230 to 3-247) and Management Indicator Species (pages 3-351 to 3-357 and 3-363 to 3-379).

ZS-39 Salable minerals, also known as common variety minerals, are sand, stone, gravel, cinders, pumice, pumicite, and clay. Salable minerals and their disposal are further defined in the Materials Act of July 31, 1947 (61 Stat.681), amended by the Acts of July 23, 1955 (PL-167; 69 Stat.367) and September 28, 1962. The Forest Service is not proposing to sell these minerals to itself. The term, as used in this EIS, is not a misnomer.

ZS-40 The Recreation Uses by Tenakee Springs Residents and Tourists table that you refer to has been corrected to say "Karst exploration."

The Forest Supervisor has determined that all of the nominated caves on the Chatham Area are significant. The determination was made in a letter to the nominating organization dated February 17, 1998. A copy of this letter was sent to the person commenting on February 26, 1998.

The high vulnerability karst maps developed by Harza Northwest, Inc. have been refined and used to delete these areas from the harvest units. Copies of the refined maps will be sent to the GIS library database. The mechanism to remove these acres from the commercial forest lands suitable land base will be an amendment to the modified 1997 Forest Plan.

ZS-41 Landslide analysis information displayed is standard Region 10 methodology. Additional information is available on request in the Indian River Watershed Analysis.

ZS-42 According to the authors of the Indian River Watershed Assessment, the two terms are synonymous. The labels in the two tables have been clarified and the numbers displayed in the erosion/washout columns corrected so that they match.

FS Response

ZS-44 (cont.)	hazard? moderate? etc. Why are areas w/high movement hazard included in harvest unit pool? How much does chopper logging (C4-p5-P4) exacerbate the problem? Elaborate.
ZS-45	p19-P4: "Indian River .produces..steelhead trout." Not from my experience. No ref cited.
ZS-46	p21-P4: 23 500 acres is what %age of productive forest on <u>NE Chichagof</u> ?
ZS-47	p28: What is the predictive power of these species (MIS) when USFS knows nothing about them? DEIS admits "there are no current population data available regarding," red squirrel, brown creeper, red-breasted sapsucker, and hairy woodpecker. No population estimate attempted for river otter, marten, bald eagle, or brown bear either. Winter and/or optimum habitat is conjecture for squirrel, creeper, and woodpecker (p29 thru p32). These species seem to be of questionable utility as a management tool.
ZS-48	p29-P8: There has been at least one, defense of life or property brown bear kill in Project Area.
ZS-49	p30-P2: I think otter have been trapped in the project area since 1990. p33-P1 says otherwise: "river otter....trapped in the Project Area." ADF&G furbearer data suspect throughout the DEIS.
ZS-50	p30-P4: says marten use "lower elevation old-growth forest habitats during the winter season." From my experience, marten also inhabit high elevation forest even during winter. How can this assertion be evaluated when no reference is cited?
ZS-51	p30-P7: "Northeast Chichagof Controlled Use Area...is closed by ADF&G and Federal Subsistence Board regulations to the use of any motorized land vehicle for trapping marten (USDI 1997)." First, your reference is not found in the bibliography section. Second, that restriction is FSB only, not ADFG, and is applicable only on federal land (see also C3-p4-P6 and C4-p4-P6). I understand the Hoonah road system (that part on non-federal land) is regularly used for trapping. Theoretically that portion of Indian River road within Tenakee city limits could be utilized similarly, although that is not the case at this time. Then "according to ADFG, there have been 82 marten trapped in the Project Area since 1990." I have serious reservations about the accuracy of that information. My family has trapped the Project Area every year since 1990 (at least 3 other people have too). We harvested 45 last year alone from Proj. Area (other years have been pretty similar, although I don't have exact records for them). I don't know how ADFG could be expected to have that information, since they do not require the precise location of harvest to be disclosed when they seal furs. I usually tell them how many marten were caught from the north side of Tenakee Inlet and how many from the south side, but that's it. I recommend contacting Rod Flynn of ADFG (ph #465-4353) to verify your data. I found this discussion especially incomplete in that it neglected to mention there was an 80% marten harvest rate in 1996 on NE Chichagof, due in large part to the unrecognized availability of the Hoonah road system. I am informed from recent talks w/ ADFG biologist, 80% of this year's harvest is mature adult, 20% juvenile, which is another sign of overharvest. All this is relevant info and should be added.
ZS-52	p30-P9: "retain[ing] features...important to marten...done by maintaining an average of over 30 percent canopy closure." How is this consistent w/ the description of "Clearcutting W/ Green Tree Retention" C2-p4 which says 10% retention?
ZS-53	p33-P1 First sentence typo. Should read "in the Tongass."
ZS-54	p33-P6: What %age of <u>OG forest</u> in the Tongass is development LUD and non devlp LUD? Should include.
ZS-55	p33-P8: "None of the past management activities in the Project Area have substantially increased the risk that viable populations will not be maintained over time." Roading has increased the risk to the point that Federal Subsistence Board changed regulations regarding use of road for hunting brown bear and trapping marten, mink, weasel. Final sentence denies that "distribution of species has been measurable affected," implying an attempt has been made to measure said distribution. Is that so?
ZS-56	p36-P5 Is there "a reasonable assurance" that funds exist to restock Ind. River?
ZS-43	Typographical errors in the narrative have been corrected.
ZS-44	This information is not necessary in the Region 10 watershed analysis methodology, therefore it was not developed. Sediment Source Areas, which include extreme and high hazard mass movement areas, are identified, mapped, and generally avoided. Areas of high hazard mass movement generally include small areas or pockets that are not high hazard. These areas were evaluated on-the-ground by soil scientists and hydrologists and the unit designed with mitigation measures employed, such as partial harvest and helicopter yarding, to reduce the potential for mass wasting events. Helicopter yarding does not exacerbate the potential problem of high mass movement soils; on the contrary, it reduces the potential for mass wasting by not disturbing soils as in cable yarding systems.
ZS-45	The Indian River Watershed Analysis Report (Paustian, et al. 1996) has been added as the source of this information.
ZS-46	This information has not been developed, nor is it necessary for the Affected Environment chapter.
ZS-47	Discussions regarding Management Indicator Species (MIS) followed the same format in the 1997 TLRMP EIS. See pages 3-351 to 3-357 and 3-363 to 3-381 in the 1997 TLRMP EIS for additional information. Models have been developed in conjunction with the ADF&G and USFWS for data analysis.
ZS-48	The reporting timeframe in the EIS was originally 1990-1995. This timeframe has been updated to include data through regulatory year 1998.
	The ADF&G has been contacted and has confirmed that there have been no defense of life and property brown bear takings reported from Tenakee Springs since 1990.
ZS-49	The reporting time frame in the EIS was originally 1990-1995. The ADF&G is considered the best source of information regarding furbearer and other wildlife species. If the person commenting has more accurate information, the ADF&G and other resource management agencies would like to see it.

FS Response

ZS-50 The 1997 TLRMP Final EIS (page 3-354) has been added as a literature citation.

ZS-51 The marten portion of the Chapter 3 Wildlife section has been updated to include new information and corrected where necessary.

As stated on page 1-1, this EIS follows the format established in the CEQ regulations. Chapter 3 is the Affected Environment and documents the existing condition of resources within the Indian River Project Area. See Chapter 4 for additional cumulative marten resource impacts analysis.

ZS-52 The 30 percent canopy retention standard and guideline refers to timber management activities in value comparison units (VCU) where over 33 percent of the productive old-growth (POG) forest has been converted to young conifer stands, or will exceed this amount after a proposed project activity. All of the VCUs in the Indian River Project Area have less than 33 percent of the POG harvested; therefore the 10 percent canopy retention standard and guideline applies.

ZS-53 Statement has been corrected as you suggest.

ZS-54 This information has not been developed and is not necessary for any analysis in this EIS. This information regarding old-growth forest is available in the 1997 TLRMP Final EIS, pages 3-18 to 3-23.

ZS-55 Radio-telemetry studies of brown bear and marten by the ADF&G in cooperation with the Forest Service indicate that these species move throughout the Northeast Chichagof island landscape. There is no indication that their distribution has been measurably affected.

ZS-56 Yes, there is a reasonable assurance that funds will be available to restock Indian River timber harvest units. NFMA requires that timber harvest units be restocked within 5 years.

FS Response

ZS-57 The statement referred to has been clarified in the Final EIS.

ZS-58 The numbers displayed in Table 3-22 were obtained, in part, from the ADF&G. There may be rounding errors in any or all of the numbers that do not affect the overall accuracy of the information presented.

ZS-59 There are many indications of overharvest that wildlife managers use to determine if this situation is occurring. Examples include harvest level trends, weather related mortality, changes in sex/age ratios, etc. Harvest levels above habitat capability may constitute overharvest, if the harvest levels and habitat capability has been accurately determined and trends indicate that both are declining. This situation is not occurring in the Indian River Project Area.

ZS-60 Column 2 displays the average (mean) number of deer harvested from Wildlife Analysis Area (WAA) 3526 during regulatory years (July 1 - June 30) 1990-1995. Column 3 displays the percentage of Project Area deer for the communities that reported taking deer from the Project Area. Column 5 displays the percentage of deer harvested from the Project Area portion of WAAs 3225 and 3526. The information presented shows which communities take their deer and numbers of deer in and near the Project Area.

ZS-61 Subsistence deer harvest is measured in pounds of deer meat, as reported in the Tongass Resource Use Cooperative Study (TRUCS). This measure was used because it is the best information available. The Abundance and Distribution portion of the Subsistence section identified deer as the most important subsistence resource in the Project Area that may be affected by management activities, and so is the focus of Subsistence discussions. Subsistence furbearer trapping, as well as other subsistence resources, and management activity impacts are discussed in Chapter 4 in the Subsistence section, Other Resources: Abundance and Distribution portion.

ZS-62 "Focusing" on deer does not mean that other resources will not be discussed, especially where access is concerned. Brown bear and marten are more relevant to discussions on access than deer. The discussion on residents of Tenakee Springs, their travel and where they prefer to hunt is appropriately in the Access portion.

p40-P5: "no other [than deer] subsistence resource is expected to be adversely affected by timber management activities." See T(3-14) or T(4-14) for listing of other resources adversely affected by timber harvest. Marten are subst. resource.

p42, T(3-22): Row 2 X Col 5 Hunter Demand Habitat Capability should be 10 * 260 = 2600 not 2598, huh?

p42-P2: What is an indication of overharvest? Don't "harvest levels...above habitat capability" constitute overharvest almost by definition?

p43, T(3-23): I have no clue what the relationship is between the numbers in Columns 2, 3 and 5. Maybe you could say a little about what this information represents.

By what units is subsistence harvest measured in discussion on pgs 43-44 to determine what %age deer comprises of total subsistence harvest? total numbers? poundage? dollar value? Why was this measure chosen, whatever it might be? Is the subsistence harvest that you consider only food gathering, or also subsistence trapping?

p44-P6: discussion of regs restricting motor vehicle access for bear & marten irrelevant to a discussion whose focus is the Sitka black-tailed deer (see C3-p40-P5). Final P, more appropriate placed in discussion of "Tenakee Springs Subsistence Use."

p45-P1: "...area contains...recreational equipment rental businesses (boats, kayaks, bikes)." Who rent boats? Is this accurate? No ref cited.

p45-P5: Comment on the definition of "home range" as presented on pg of Glossary. With a skiff, one can easily travel 20+ via skiff, use a rec. site, and return home, especially in the long daylight hours of summer. Would suggest a modest upwards revision of the 20 mile estimate.

p45-P6: I do not consider Tenakee to be an "unusual" community. Civilized society exists because its "members have agreed to limit their personal freedoms." That's not an extraordinary concept. Nor do I consider the prohibition on automobiles unusual. In SE Alaska it's actually pretty common. Visit Elfin Cove, Warm Springs Bay, or Pelican for example. "Set[un]g hours for...the hot-springs" isn't too reactionary either. I think you're way out of line here.

p46-P1: Resident tend to use the trails in the winter ... More accurately year round.

p45-P2: The bear-viewing area is unfortunately not confined to the immediate vicinity of Indian River, as most Tenakee Trail users will realize.

p45, T(3-24): VCU's 2210 and 2221 used for Wildlife Bear Viewing and Camping.

p45-P4: While there are some "pebble beaches" in the Whip Station and 10-Mile areas, the majority of the beaches are composed of rocks substantially larger than pebbles. Protection pretty fair in northerly too I might add.

p47-P4: The beaver ponds out the road have no more recreational value than the ones in Kadashan or Goose Flats.

p47-P5: The "dispersed campsites" referred to here have no more to offer than any other place in Tenakee Inlet. I wouldn't call them more suitable for camping than any other place around here. You might as well pick a hundred places and call them all dispersed campsites.

p47-P6: Actually "the feeling of an open, rolling landscape" is one commonly experienced in the alpine areas of SE Alaska.

p48, T(3-28): No snowmobiling on Indian River Road System. Can add to 10-Mile Estuary: Nature Study, Small

FS Response

ZS-63 Nelson 1996 has been added as a citation.

ZS-64 This definition of home range is from the 1997 TLRMP Final EIS (page 3-106).

ZS-65 This section has been re-written to address your concerns.

ZS-66 Residents use the trails year round; however, they tend to use them more in the winter when weather prevents use of boats and skiffs to travel to and from Tenakee Springs.

ZS-67 In our interviews with resident outfitter/guides in Tenakee Springs, they indicated that they take their clients to the bear viewing area from the Indian River bridge to the waterfalls.

ZS-68 These two activities in these two VCUs have been added to the table as you suggest.

ZS-69 Comment noted.

ZS-70 Kadashan and Goose Flats are not located in the Project Area.

ZS-71 Comment noted.

ZS-72 Comment noted.

ZS-73 Additions have been made to the table as you suggest. The trail referred to here was a trail specifically brushed by deer hunters to access the alpine.

FS Response

ZS-73 (cont.)	Game Hunting. Under "sites" column, I might comment there are many trails in the forest. If there is something unique about this one, perhaps you could comment on its extraordinary aspects.	
ZS-74	p49-P1: "...read system...not connected to any community and public vehicle use is rare." ROS classification says "moderate evidence of other users on road" and up to "20 group encounters per day." Also same page recognition of ATV use by hunters disembarking from ferry. Doesn't sound like vehicle use is all that rare.	ZS-74 Comment noted.
ZS-75	p49-P7 I think only two private fishing guides live in TKE.	ZS-75 Comment noted.
ZS-76	p50-P1: Why only two private fishing guides live in TKE? If more info not available, could you extrapolate?	
ZS-77	p50-P7 How likely is it that such "enhancement opportunities" will be implemented?	ZS-76 The information displayed is the best available.
ZS-78	p51-P3 Does "Seal Cove" refer to a different location than "Seal Bay?" See C2-p14-P2 and C3-p53-P8.	ZS-77 It is difficult to say how likely enhancement opportunities will be implemented due to a number of variables, such as availability of funding, personnel to implement, and higher priority projects.
ZS-79	p53: What %ages of VCU's 2200 and 2221 are Old Growth and Timber Production as given for 2041, 2160, and 2210?	ZS-78 Seal Bay is the correct name. Corrections have been made in the Final EIS.
ZS-80	p62-P2: By no means are the lifestyles or values presented here mutually exclusive.	
ZS-81	p62-P3: To be more precise, should state that effects locally would be largely negative while there might be limited positive effects regionwide.	ZS-79 These percentages were not calculated as part of the visual resource inventory.
ZS-82	p62-P5: With HNH's timber supply coming from private land, would that community really be affected by "changes in the National Forest timber supply?" At some point in the HNH profile, I think that community's relationship to Whitestone Camp needs to be analyzed, along with the interdependence (or lack) of economic tie between the two. Also ANG, HNH, and TKE would be affected by reduction in game availability, not just "could." (see final sentence).	ZS-80 Comment noted.
ZS-83	p62-P6: Yes, However management could take more consideration of local needs, for example moving timber production nearer to communities that wish to base their economy on this resource (while also reducing transportation costs). Also hard to see how proposed action "ensures the availability" of subsistence resources.	ZS-81 Comment noted.
ZS-84	p65-P2: which communities have "wood processing facilities that would likely utilize this timber?" Is this comment restricted to AGN, HNH, TKE as first sentence of the Paragraph would indicate? If so, I question the assertion and request some justification.	ZS-82 Not all of the timber harvested in the Hoonah area comes from private land; the National Forest System lands surrounding Hoonah have had timber management activities occurring on them for over 20 years. Changes in the National Forest timber supply would affect the community. According to the 1997 TLRMP EIS, Hoonah provides state-operated schools and a health clinic that Whitestone Logging Camp residents use. No other Hoonah/Whitestone Logging Camp relationship information is readily available. Regarding the last sentence in paragraph 6 on page 62, comment noted.
ZS-85	p65 & 66 Descriptions of the 3 communities indicate that all 3 have an identical unemployment rate of 10.6%. Misleading. Is it really so, or is that info repetitive and not community specific? If not, write this, please mention that.	
ZS-86	p66-P4: Rephrase Sentence 3 to "At the same time, there is considerable opposition to clearcut logging within the Tenakee Springs home range." to use USFS vocabulary.	
ZS-87	Chapter 4	
ZS-88	p3-P1: "there are no known or suspected [mineral] deposits...in the Project Area." But C4-p84-P2 and P3 cite expected mineral exploration as another reason to build more roads. Which is it to be?	ZS-83 See the "How the Indian River Project Area was Selected" section of Chapter 1. See the Subsistence section of Chapter 4 regarding availability of subsistence resources.
ZS-88	p6: What exactly is "sediment risk," and how measured? In Fig 4-1 does the info for Alt. A assume reentry w/in 10 years, or does it represent the current state of affairs?	
ZS-89	p8-P2: What is "rain-on-snow event?" What does "infrequent" mean? Has USFS been continuously monitoring the flow of these 3 watersheds for the past 20 years as last sentence implies, or were the "major peak flows" mentioned	ZS-84 Hoonah, Ketchikan, Klawock, Kasaan, Thorne Bay, Wrangle, Saxman, Metlakatla, and Petersburg have wood processing facilities that could utilize this timber.

FS Response

ZS-85 Unemployment information came from the 1997 TLRMP Final EIS (pages 3-529, 3-565, and 3-655); the EIS information came from the Alaska Department of Labor, Alaska Economic Trends (4:1995). The State compiled these numbers by census area, so the numbers are regionwide and not community specific.

ZS-86 "Home range," as used in this EIS, is a Recreation resource term defined as the area regularly accessed by typical day users from a community on an average day (See Glossary). The term does not apply in the discussion you reference.

ZS-87 The entire sentence reads, "There would be no effect to the locatable and leaseable mineral resources because there are no known or suspected deposits on National Forest land in the Project Area." The references made on page 4-84 of the Draft EIS refer to salable minerals. In the Geology, Minerals, and Caves section of Chapter 3, it was noted that there are numerous deposits of salable minerals that could be developed for common uses.

ZS-88 Sediment risk is a relative index of the risk of sediment production and transport, and the effect of sediment on sensitive fish habitat. It is based on natural landform conditions and land management activities. Landform factors include watershed size, stream density, watershed steepness, soil characteristics, and stream channel type (which relate to fish habitat). Management activities include harvest acres and location, type of logging system, miles of road, and stream crossings per mile of road. The risk model integrates these factors and assigns each watershed an index value ranging from 1 to 10, with 1 being the lowest risk and 10 the highest risk.

Sediment risk is not something that is measured, rather it is calculated. The index values are unitless; they can only be used to compare the risk of a particular watershed to those of other watersheds. (cont.)

FS Response

(ZS-88, cont.) Each watershed was rated for pre-harvest conditions (year 1956), current conditions (Alternative A), and future conditions based on each action alternative. Figure 4-1 displays the percent increase in sediment risk over pre-harvest conditions. Alternative A represents current conditions without a reentry in 10 years. The effects of future entries are not rated because the location of harvest units is not known (unit location affects the results of the risk model, see above). Each future entry will consider the cumulative effect of prior and reasonably foreseeable future entries.

ZS-89 Rain-on-snow stream runoff events are commonly associated with the maritime Pacific Northwest. The term, "rain-on-snow," is used to describe rapid melting of wet, shallow snow packs by intense winter rainfall events. Clearcut timber harvest in coastal watersheds in British Columbia, Washington, and Oregon have been shown to increase the frequency of two- to ten-year return period flood events. The Indian River Watershed Analysis reviewed stream gage data for the Kadashan and Indian River watersheds, both located near Tenakee Springs. No large winter flood events were observed in the Kadashan River drainage from 1968 through 1994. Similarly, no evidence of rain-on-snow floods were observed for the Indian River stream gage record, either before or after the first timber harvest entry in the mid-1970's. The Indian River Watershed Analysis hypothesized that additional timber harvest in Project Area watersheds could increase the risk of a rain-on-snow event occurring; however, the available data indicates that large magnitude, rain-on-snow floods are extremely rare in this area. It is likely that any increases in rain-on-snow runoff associated with timber harvest could not be readily detected from the natural variation in fall and winter flood events.

ZS-90 The reference in the EIS to increased flow in Staney Creek, as a result of extensive timber harvest, pertains only to small increases in summer low flows. The magnitude of peak flood flows in Staney Creek did not measurably change after 35 percent harvest of the watershed.

FS Response

<p>ZS-89 (cont.)</p>	<p>just noticed at random intervals?</p>
<p>ZS-90</p>	<p>p8-P4: Why expect "some increase" in Freshwater Creek flows when far less than 35% of the watershed will be harvested (35% the critical limit in Stanley Creek study, cited P1 this page)? and in 10-Mile drainage, why take so much out of TSZ when it is a smaller %age of the area (figured from Tables 4-2, 4-3 & 4-4) than in Ind. River or Freshwater? If you must harvest 10-Mile area, this indicates you should concentrate harvest below TSZ.</p>
<p>ZS-91</p>	<p>p9-P1: Why would "moderate" increase in flow not increase stream power "significantly?"</p>
<p>ZS-92</p>	<p>p13-P1: Sentence 2 should be "...harvest of between 1586 and 2525 acres..."</p>
<p>ZS-93</p>	<p>p14, T(4-9): What %age of 1956 preharvest NE Chichagof OG forest will be harvested cumulatively?</p>
<p>ZS-94</p>	<p>p15: Is it practicable to avoid new construction in VCU's 2200 & 2160 across wetlands? Is it practicable to forgo harvest in areas that would require such construction, especially when being harvested below cost? (see C3-p23-P2 wetlands requirements). Less than 3 miles of such road, & you are required by Fed. law to avoid if possible. Are those 3 miles so important? If so, you need to demonstrate that fact.</p>
<p>ZS-95</p>	<p>p16-P1: Difference between "critical MIS" and other MIS?</p>
<p>ZS-96</p>	<p>p16, T(4-12a): Row 1, Column 4 says 2 acres of Beach Fringe affected under Alt. B, (Cum % -21.5). My figuring says the Cum % should be -21.6%.</p>
<p>ZS-97</p>	<p>p17, T(4-12b): Compare Row 3, Cols 3 & 4 (96 Old Growth acres vs. Alt. B Old Growth acres). I don't see how implementation of Alt B could increase the number of old growth acres. Also Row3 X Col5 (OG X Alt C) should be "-14%" not "-15%." Then compare T(4-12b) with T(4-13b). Both tables list the same source, yet they fail to agree on total acreage of OG forest in 1956, 1996, and for all alts. listed. Does this table consider cumulatively future NE Chich harvests (e.g. 8FB)?</p>
<p>ZS-98</p>	<p>p19-P1: How is habitat impact adjusted for partial harvest units? Have the effects of different methods been analyzed, or how are you aware of the different effects? And what is the value assigned to each type of partial harvest? see too C1-p21-P9. Sentence 3 is more clear like this: "...the effects indicated by the models are more severe than would actually be expected (except for deer and porcupine), particu..." or at least that was my understanding of the situation. If I am correct, and models have been adjusted for these two species, the question comes to mind, why not adjust models for all other species as well?</p>
<p>ZS-99</p>	<p>p19, T(4-14): How does Alt E harvest more acres than Alt D, yet leave more MIS suitable habitat, especially when all units are assumed to be clearcut (P1 this page makes that assumption)?</p>
<p>ZS-100</p>	<p>p21-P1: Since "clearcuts retain some habitat value [for marten]," does the adjusted habitat model for marten assign some value to clearcut areas? If so, how determined? Also "Model shows Alt. E would have the least reduction in ..habitat for marten." Actually T(4-14) shows Alts B, D, and E all having exactly the same effect.</p>
<p>ZS-101</p>	<p>p24-P5: "...habitat for..marten would decline further if roads are left open." Not so. Habitat itself will not be affected by the status of the road, although population might. Furthermore current FSB regs already prevent trapping via motorized land vehicle as noted elsewhere in DEIS.</p>
<p>ZS-102</p>	<p>p26-P2 & 3: If not following USFWS recommendation on connectivity between VCU's 2150 & 2160 because proposed reserve did not technically qualify, what is the status of the proposed area? Was it rejected so it could be scheduled for logging, or are you leaving it as recommended despite its technical shortcomings?</p>
<p>ZS-103</p>	<p>p27-P4: "Disturbance impacts [on humpback whales] would be ... dependent on many factors, such as the size of the bay, water depth," The size of Tenakee Inlet is pretty well fixed, not too variable.</p>

ZS-91 Increased flow volume will result in an increase in total stream power for a given reach of stream channel. However, as noted above, any increases in peak flows for Project Area watersheds will likely be within the range of natural variation of flood events. Potential increases in total stream power would likely not be of sufficient magnitude to significantly alter sediment transport or channel condition in the Project Area watersheds.

ZS-92 The range of acres harvested has been corrected to display the latest information.

ZS-93 The cumulative acres harvested as shown in Table 4-9 of the EIS (21,198 acres) divided by the total forested landscape association acres across the Northeast Chichagof Island landscape analysis area as shown in Table 3-1a (237,478 acres), multiplied by 100 equals 8.9 percent.

ZS-94 The Wetlands portion of the Vegetation section of Chapter 4 has been clarified to say that road construction across wetlands cannot be avoided. Impacts have been avoided or mitigated as much as possible.

ZS-95 "Critical MIS" were identified in 1997 TLRMP EIS as having special management concerns.

ZS-96 Comment noted regarding rounding error.

ZS-97 Typographical errors in the table have been corrected. Old-growth acres in Alternative B is 134,986 acres, not 137,986. The percent change for Alternative C is 14%, not 15%.

The differences between the two tables (388 acres from 1956, 700 acres from 1996, 436 acres from Alternative B, 431 acres from Alternative C, 428 acres from Alternative D, 437 acres from Alternative E, and 428 acres from Alternative F) are due to mapping errors and using two different data sets to create the maps and tables.

The cumulative impact tables consider reasonably foreseeable timber harvest projects, such as the Eight Fathom project.

FS Response

ZS-98 The last sentence in the paragraph you reference explains how impacts were adjusted for partial harvest. The effects of different methods have not been analyzed and we are not aware of any different effects. Planning model specialists were consulted regarding partial harvest adjustments to the models; consensus was that the deer and marten models could be adjusted as shown in the Draft EIS, but that there was not enough information to come to consensus regarding the other MIS.

ZS-99 Alternative E (as well as the other alternatives) is described in Chapter 2 in the Alternatives Considered in Detail section. This alternative was designed to emphasize maintenance of deer habitat (and other old-growth dependent species) by "leaving large blocks of old-growth forest on the south-facing slopes in Indian River and the lower elevations of 10-Mile Creek above the estuary."

ZS-100 The marten model assigns a value of 0.2 to clearcuts. The value was determined in the marten model developed by the inter-agency working group tasked with developing the MIS models.

The narrative has been corrected in the Final EIS.

ZS-101 The sentence has been further clarified as you suggest.

ZS-102 USFWS "suggested" moving the Project Area interior small old-growth reserve, they did not "recommend" moving it. The area that USFWS proposed for a small old-growth reserve LUD is part of a Timber Production LUD. The USFWS suggestion was not adopted because the area they proposed did not meet the criteria for a small old-growth reserve. Timber Production LUD management prescriptions (modified 1997 Forest Plan, pages 3-144 to 3-150) will apply until such time as the modified 1997 Forest Plan is changed.

ZS-103 Comment noted.

FS Response

ZS-104 Here is the information you requested:

	Alt. B	Alt. C	Alt. D	Alt. E	Alt. F
	% Vol (% Ac)	% Vol (% Ac)	% Vol (% Ac)	% Vol (% Ac)	% Vol (% Ac)
Cable	23.9% (18.0%)	42.4% (36.3%)	41.0% (33.4%)	40.5% (33.5%)	37.9% (31.9%)
C/H *	5.5% (3.5%)	8.1% (6.8%)	4.3% (3.8%)	7.4% (5.6%)	5.3% (5.1%)
Heli	68.9% (77.0%)	43.5% (51.8%)	47.4% (57.2%)	47.5% (57.5%)	49.7% (57.2%)
Shovel	1.7% (1.5%)	6.0% (5.1%)	7.3% (5.6%)	4.5% (3.4%)	7.1% (5.8%)
Total	100% (100%)	100% (100%)	100% (100%)	100% (100%)	100% (100%)

* C/H = Cable/Helicopter. For harvest units in this category, most acreage would be cable logged, but one or more settings would be logged by helicopter.

ZS-105 Here is the information you requested:

	Alt. B	Alt. C	Alt. D	Alt. E	Alt. F
	% Vol (% Ac)	% Vol (% Ac)	% Vol (% Ac)	% Vol (% Ac)	% Vol (% Ac)
Even-Age					
CC *	43.0% (67.5%)	62.7% (80.3%)	61.7% (80.3%)	66.8% (82.2%)	63.5% (77.9%)
OR *	17.0% (16.5%)	10.4% (8.6%)	10.0% (8.1%)	10.0% (9.1%)	10.3% (10.5%)
PC *	6.4% (3.4%)	9.4% (4.9%)	8.0% (4.3%)	5.3% (1.7%)	13.2% (5.5%)
Uneven-Age					
GS *	31.2% (10.1%)	8.4% (1.9%)	10.6% (2.6%)	8.1% (2.1%)	4.0% (1.3%)
STS *	2.4% (2.5%)	9.1% (4.3%)	9.7% (4.7%)	9.8% (4.9%)	9.0% (4.8%)
Total	100% (100%)	100% (100%)	100% (100%)	100% (100%)	100% (100%)

* CC = Clearcut with Green Tree Retention. GS = Group Selection.
OR = Overstory Removal. STS = Single Tree Selection.
PC = Patch Cut.

p30, T(4-17): Would like to see %age of Alt. harvested by type included in table.

p31, T(4-18): Should also list %age of Alt. harvested by silvicultural system as well as totals.

p33-P3, P4, P5: How is "tree vigor" measured? And what is "overmature" as compared to "mature" (see P5, sentence 3). Hopefully it is not just a function of the desirability of the tree for harvest. If log quality suffers, is the increased yield expected to be enough to offset this (in terms of economics that is)? Will it be enough not to sell at a loss next time harvested? What about the value of disease to OG forest as mentioned C1-p3.

p35 & 36: Discussion of financial efficiency is woefully inadequate. It fails to separate Forest Service costs (e.g. fuel, construction, etc.) from private costs (e.g. transportation, etc.) and it is impossible to compare the two from line for either party. Such an analysis could explain why some sales with negative appraisal results have sold in recent years, a fact that seems to puzzle the writers on p36. Table 4-22 is incomplete by its omission of Alternative A; perhaps explainable by virtue of the fact that inclusion of this alternative would force the report to give a No-Action Alternative the highest efficiency ranking. While dollars per unit is appropriate to consider, equally important (if not more so) is total dollars. Total stumpage calculations (reached by multiplying net stumpage by harvest volume) result in the following figures: Alt A \$0; Alt B (\$4 688 600); Alt C (\$4 879 000); Alt D (\$4 104 000); Alt E (\$4 165 000); Alt F (\$5 904 000). The Relative Ranking of the alternatives is considerably changed. By looking at Total Stumpage, the Alternatives are (from best to worst): A, D, E, C, F. Remember the TTRA mandate is to "meet" market demand. Offering timber below cost leans more toward "creating" demand.

p39-P3: Should say ANG, HNH, TKE are sub "communities and do derive a portion of their deer." to use a more definitive word. See following "JNE does harvest ..."

p40-P1: "The .line displays 10 percent (one measure of the harvestable amount) of the current estimated deer habitat capability." Include statement as to why this is most appropriate measure of harvestable amount.

p43-P6: Failure to recognize Hoonah road system use for marten trapping suggests DEIS has grossly underestimated the pressure this resource already faces. In light of this fact, need to re-evaluate project impact on marten.

p44, T(4-23): I consider the avg. harvest/year estimate for marten (60/year) to be ridiculously low. This household alone has averaged roughly half that. Please re-check the accuracy of this data with ADFG.

p45-P5: If roads are closed, how could personal-use timber be made "more accessible to individuals?" Also would LTF low-angle slide even be available to individuals?

p46-P4: "any displacement [of household subsistence use] that may occur would likely be temporary until timber .. This ignores the fact that once habitat destroyed, it's useless as such for 100+ years; see T(3-14). Not very temporary. Even road use may be permanent displacement under some proposed RMAs.

p48: In order to evaluate these findings, the DEIS needs to state whether there currently exists a significant possibility of a significant restriction of subsistence use for the listed resources. If the discussion of a 1 in 11 chance of severe winter leading to deer restriction is intended to speak to the current situation, you need to analyze how that chance is affected by the different alternatives. Presumably, with less existing habitat, it would require a less severe winter to trigger a subsistence restriction. How often do these less severe winters occur? Once every 4 years? 8 years? Table 4-24 fails to recognize that some alternatives would result in a restriction of access due to road closure.

p49-P7: "TTRA directed Forest Service to seek to meet market demand." Do you consider private timber supply (e.g. Kake, Huna, etc.) when determining market demand? Not addressed here. Goes on say "demand for timber...expected to remain high." citing a 1995 reference. More current reports might indicate otherwise.

p49-P8: Does sentence 3 refer to alternatives for the Project Area or forestwide?

FS Response

ZS-106 Tree vigor is measured in terms of tree height, diameter, and canopy crown growth (J. Russell, pers. comm.). Mature timber has reached 95 percent culmination of mean annual increment (growth); overmature timber is growth beyond this level. Predicting the economics of second-growth timber harvest 100 or 200 years in the future is not likely to be accurate, so it is not calculated. Decisions to sell or not sell timber will need to be made on a case-by-case basis. As stated before, disease plays a role in maintaining old-growth forest; regeneration (harvest) stands are not intended to mature to old-growth forest.

ZS-107 The financial efficiency analysis followed direction in Forest Service Handbook 2409.18; there is no direction to separate costs as you suggest. Table 4-22 does not include Alternative A because there is no mid-market analysis if there is no timber to sell.

Regarding your calculations for total stumpage versus net stumpage, Forest Service Handbook direction does not include this economic model.

This timber sale project EIS does not "create" demand for timber. Refer to the Purpose and Need section in Chapter 1 for additional information regarding market demand and how it applies to this EIS.

ZS-108 The word "could" has been deleted from this sentence.

ZS-109 A citation has been added to this sentence.

ZS-110 The numbers of marten harvested from the Project Area and from the Northeast Chichagof Landscape Area were provided by ADF&G Biologist Jim Faro (retired) of the Sitka Office. Mr. Faro's database for marten is by Minor Harvest Area, and includes marten carcass information from Rod Flynn. The person commenting has regularly contributed marten carcasses to Mr. Flynn as part of the ongoing ADF&G/Forest Service marten study. For the Project Area, Mr. Faro reported the numbers of marten harvested in Minor Harvest Areas 2507, 2602, 2603, and 2604 from 1990 to 1995. The boundaries of these Minor Harvest Areas closely follow the boundaries of Project Area VCU's 2160, 2200, 2603, and 2604 respectively. (cont.)

FS Response

(ZS-110, cont.) For the Northeast Chichagof Landscape Area, Mr. Faro reported the numbers of marten harvested in Major Harvest Area X-35 (includes Minor Harvest Areas 2304-2305, 2504-2509, 2601-2605, and 5101-5105, which correspond to WAAs 3523, 3524, 3525, 3526, 3551, and 3630) from 1990 to 1995. Marten harvested from the road system on the private land open to motorized vehicles around Hoonah was included in the reported information.

ZS-111 Mr. Flynn's data indicates that harvest levels vary widely, from a high of 73 marten from Northeast Chichagof Island in 1996-97 to a low of 0 marten in 1990-91 (the latter was an emergency closure). Averaging the numbers makes them appear smaller. We checked back with ADF&G as you requested and have updated the numbers through regulatory year 1998, and reported in the Final EIS. None of the updated numbers changed any of the subsistence determinations.

ZS-112 The sentence actually refers to availability of firewood and personal-use timber under the free-use policy. This EIS does not change the free-use policy. Allowing individual future access to the LTF site at Sunshine Cove would be up to the City of Tenakee Springs. Access to the uplands is easier with a low-angle slide in place than no slide in place due to the steepness of the beach in that area.

ZS-113 There is nothing in Table 3-14 that indicates that habitat is destroyed or useless if old-growth timber stands are harvested. The Table displays relative importance of conifer successional stages as habitats for MIS. Early and mid-successional stages provide least important, low population density habitats for up to 200 years. Subsistence users used the new timber sale roads after the area was harvested in the late 1970's and early 1980's and are likely to do so again after the current round of timber harvest.

RMOs may close roads to motorized vehicles, but they would not close roads to people hiking, biking, or cross-country skiing, for example.

FS Response

ZS-114 The last sentence in the first paragraph of the Resource Findings portion says that a restriction on subsistence use of motor vehicles for hunting brown bears and trapping furbearers is currently in place. There are no known current possibilities of a significant restriction of subsistence use before the Federal Subsistence Board or the Southeast Regional Advisory Council regarding subsistence resources in or near the Project Area.

The discussion about weather is not intended to speak to the current situation.

Deer population census techniques can detect mortality rate trends of 20 percent or greater. The model for deer indicates that the action alternatives will reduce suitable habitat for deer 4 to 7 percent (Table 4-14). The census techniques and models are not sensitive enough to distinguish the minor differences between alternatives and larger severe winter mortality rates. Occurrence of less severe winters is unknown.

Refer to the last sentence of Response ZS-113. People can still access the area to engage in subsistence activities.

ZS-115 Morse's September 1998 report, "Evaluating the Demand for Tongass Timber, Using Adaptive Management to Implement Section 101 of the 1990 Tongass Timber Reform Act," provided most of the information regarding demand.

The section has been revised to include Morse's information. The citation has also been updated as you suggest.

ZS-116 The alternatives referred to here are the ones developed for the Indian River Project Area EIS.

FS Response

ZS-117	p50-P2: Fails to disclose that over three-fourths of the beach fringe w/in Proj. Area has already been harvested.	ZS-117	Table 4-12a displays 21.4 percent of the beach fringe impacted between 1956 and 1996. This project would increase this percentage a maximum of 0.1 percent, depending on the alternative selected.
ZS-118	p54-P4: claims Alt D. "would have the least impact on hunters [in Ind. River drainage]." Not true according to T(4-26) because road would be closed to recreational traffic. See also C4-p55-P5 & P8.	ZS-118	Hunters may still access the Indian River road system using non-motorized methods, i.e. hiking, biking, cross-country skiing, etc.
ZS-119	p54-P7: E TKE trail used for non-recreational (essential) purposes, which W TKE trail cannot replace.	ZS-119	This paragraph discusses recreational trail uses. Mitigation measures designed to keep the trail open and safe to use are located in Appendix C.
ZS-120	p54-P8: Who pays for access ramp and trail improvements?	ZS-120	The timber sale contractor would include these items in their bid. See Appendix C, Recreation section.
ZS-121	p55-P5: Unclear who makes decision to restrict access: contractor or USFS? see too P7.	ZS-121	Decisions to restrict access are made by the Forest Service in cooperation with the timber sale contractor.
ZS-122	p58-P2: Claims Alt C has least impact to 10-Mile because no LTF used. Alts E and D also have no 10-Mile LTF.	ZS-122	Some of the information in the recreation effects report was inadvertently edited out of the Draft EIS. The paragraph has been clarified in the Final EIS.
ZS-123	p58-S9: "Recreation and tourism income in the community of Tenakee Springs would likely be unchanged under Alt. D." Actually Alt. D results in closure of road system, hence would result in loss of non-rural hunter recreational use and income. Is this adequately recognized in T(4-27)?	ZS-123	Refer to Response ZS-118. The numbers displayed in Table 4-27 account for this continued type of recreation use.
ZS-124	p59, T(4-27): "Source: Nelson 1997," not listed in Refs Cited. I don't see how an 18% decrease in use translates to only 2% decrease in revenue? If this isn't a typo, it deserves some justification. Currently use generates about \$374/person (or \$559/day) in total. Projected to generate about \$413/person and \$659/avg. day use. I doubt people will be willing to pay even more when wilderness opportunities being removed.	ZS-124	The reference cited has been corrected.
ZS-125	p63-P2: Actually East TKE trail starts in town and heads east. The West TKE trail starts "three miles west of Tenakee..." Generally considered to be two separate trails (see C4-p54-P7).		Based on interviews in the community about recreation and tourism, it was determined that the people most impacted by Alternatives B, C, E, and F would be independent travelers using the Sunshine Cove area and Indian River road. Independent travelers tend to spend less money on their trips compared to the clients of outfitter/guides. Consequently, reduced use is not directly proportional to reduced revenue.
ZS-126	p68-P2: Says steel bridges are planned for roads to be kept open after harvest. They can't then be "removed and used in other locations, which would reduce overall costs." How can you propose to do both? Has this been done elsewhere, or are remarks about economic efficiency only hypothetical? Who pays for bridges? Finally, does re-use really lower costs for this project or only for following ones?	ZS-125	The sentence has been corrected as you suggested.
ZS-127	p70-P3: Sea cucumbers noted at Sunny Cove LTF site, but "numbers are not enough for commercial harvest." Are you aware the whole inlet was just open for cucs? Up to 2000 lbs./opening, once a week. I know some harvest did take place in that general vicinity. Are dungy #s enough for commercial harvest?		
ZS-128	p71-P3: 10-Mile "site affords very little protection from wind..." Depends on what way the wind is blowing. If true, what use is the area as an anchorage (C3-p48-P2)?		
ZS-129	p71-P5: If only one LTF site would be used, why propose two (esp. in light of MOU w/ TKE)?		
ZS-130	p73, T(4-37): SNAP analysis. Meaning of "Current Net Value" unclear to me. What is it measuring? Value per mb? Value per mmb? Net Value? What other "facilities" are considered besides bridge replacements and LTF?		
ZS-131	p74-P2: Sentence 1 should begin "The Project may have negative effects ..." to stay parallel w/ structure of Sentence 3. Sentence 2 "wildlife habitat destruction," more accurate than "modification."		
ZS-132	p74-P4: Can you be more specific about which communities or operators are at risk in this scenario? How likely is the domino theory presented here? What are the chances that "no other sources of timber [could be] located?" I have a hard time taking this scenario seriously. If we are to engage in pure speculation, I would ask that you give other possibilities equal space. Consider the following two scenarios. In one the no-action alternative restricts the timber supply; but instead of shutting down, operators find more efficient ways to extract, process, and market their product, making the industry stronger and self-sufficient. Another possibility is that timber is harvested in Indian River. The reduction in the local tourism industry depresses the Tenakee economy, and a resulting negative ripple effect cripples the SE Alaska economy.		

FS Response

ZS-126 Steel bridges that are used on roads that remain open may be moved to other locations and replaced with log stringers.

Moving bridges from one sale area to another (sometimes referred to as "platooning") is more common in the lower 48 National Forests. It has been done on the Tongass National Forest on a small scale, and is becoming more common as a means of reducing timber management costs.

Bridge costs are included in the contract appraisal package. Bridges become the property of the U.S. Government.

If the overall number of steel bridges purchased is reduced, either because log stringers were substituted or bridges were platooned, then costs for this project would be reduced. Otherwise, costs would be reduced for subsequent projects; or, if bridges were moved to another project area, costs would be reduced for other projects.

ZS-127 Information about the 1997 commercial sea cucumber fishery has been added to this paragraph in the Final EIS.

Whether or not the number of Dungeness crab are high enough to hold a commercial fishery is outside the scope of this project specific EIS. The ADF&G, Division of Commercial Fish and Board of Fisheries makes these determinations. Tenakee Inlet has been closed to commercial Dungeness crab fishing for approximately 10 years at the request of Inlet residents. Residents wanted the resource reserved for non-commercial uses.

ZS-128 As you note, the amount of protection provided by the 10-Mile Creek LTF site depends on which way the wind is blowing. There are times when the wind is blowing such that the site provides an adequate anchorage.

FS Response

ZS-129 The National Environmental Policy Act (NEPA) regulations require us to develop and evaluate a range of all reasonable alternatives that fulfill the purpose and need and address the significant issues. The Proposed Action (Alternative B), that included the Sunshine Cove and 10-Mile Creek LTF sites, was described in the Notice of Intent dated November 1, 1995 before the LTF MOU was approved by Tenakee Springs voters in January 1997. The other alternatives (C through F) were developed and approved by the responsible official in October 1996, also before the MOU was approved. Three LTF sites are displayed, discussed, and analyzed in the EIS to provide the responsible official with a range of reasonable alternatives that fulfill the purpose and need and address the significant issues (See Chapter 1, Issue Area 4: Log Transfer Facilities (LTFs) and Camp Location). The MOU, in and of itself, does not take the place of NEPA analysis and decision documents, although it may play a role in the decision made.

ZS-130 Current Net Value is expressed in terms of dollars per thousand board feet (\$/mbf). This measure has been added to the table.

"Facilities", as the term is used here, refers to roads, bridges, LTFs, and logging camps.

ZS-131 Comment noted.

ZS-132 This section was written in general terms referring to the communities and operators in Southeast Alaska. The no action scenario presented here is just as likely to occur as any other scenario. We are unaware of any other sources of timber that could supply mill operators in Southeast Alaska. Your scenario comments are noted.

FS Response

- ZS-133** p74-P5: "The Forest Service has generally tried to achieve cost-efficient management." Your track record would indicate otherwise, not to mention T(4-22).
- ZS-134** p75, T(4-38): "Source: Regan and Peterson 1997." Not listed in Refs Cited.
- ZS-135** p75-P3: What guarantee exists to ensure timber will go to independent mills throughout the region instead of being shipped overseas?
- ZS-136** p76 Which communities are you considering to be timber dependent and which subsistence dependent (recognizing the two are not mutually exclusive), both locally and region-wide?
- ZS-137** p76-P1: "Alt A...would not support a local or regional ...industry." Is there a local wood products industry to support? If not, should you imply there is?
- ZS-138** p76-P3: "over long term...partial harvest would result in negative impacts." Such as?
- ZS-139** p76-P4, P5, P6: Predicts that # of ANG residents hired by project "probably be small." You forgot to include an estimate on likelihood for HNH or TKE residents.
- ZS-140** p78-P7: "Opportunities for dispersed recreation use...would be maintained and increased ." How are they increased, especially when road is closed? Changed yes, increased I doubt.
- ZS-141** p80-P5: Does the phrase "these activities are consistent with the ACPMP to the maximum extent practicable," mean proposed activities are not entirely consistent w/ ACPMP? If so, which ACPMP policies is it not practicable to follow and why? If not, remove wording.
- ZS-142** p81 "Clearcutting as the Optimal Method of Harvesting": To quote "...clearcutting will be used only where this practice is determined to be optimum meet objectives...where there is a high risk of dwarf mistletoe reinfection, and where risk of windthrow is determined to be high [emph. added]." Then follows an inadequate discussion of how mistletoe infection and windthrow risk are calculated. I notice C3-p22-P2 says you don't even know how many events caused existing blowdowns. Are such statements intended to create confidence in your ability to predict future wind events? Use of the word "and" in the aforementioned sentence requires that all three conditions be met before clearcutting is to be used. But you say "all ...units, proposed for ...clearcut...have either a high level of mistletoe infection or a high risk of windthrow [emph added]." That is not what the Alaska Regional Guide prescribes, as you present it here. Even by your standards, clearcutting is not necessarily the optimal method of harvest for this area.

ZS-133 Comment noted.

ZS-134 The year has been corrected for this citation in the References Cited section.

ZS-135 There are no guarantees; however, there is an export policy that prohibits transporting hemlock and Sitka spruce logs from National Forest land outside of Alaska without undergoing primary manufacture. Export permits for hemlock and Sitka spruce logs from National Forest land may be granted on a case-by-case basis and depend on whether or not the timber is excess to the needs of local mills.

ZS-136 All of the communities in Southeast Alaska that receive Federal Treasury payments (25 percent fund for schools and roads) may be considered dependent on timber. Refer to Response ZS-84 for a list of the communities that have timber processing capacity. All of the communities in Southeast Alaska, with the exception of Juneau and Ketchikan, are rural with a subsistence preference. The same information applies locally.

ZS-137 Refer to the list of communities in Response ZS-84. The list includes Hoonah, a local community.

ZS-138 Partial harvest units would be re-entered approximately every 20 years and a percentage of timber volume harvested. If 20 percent of the volume is harvested every entry, then all of the commercial volume would be harvested in 100 years. Some of the negative impacts associated with traditional clearcutting will occur, such as lack of snow interception, but the effects will be spread out over time and in intensity.

FS Response

ZS-139 The paragraph for Hoonah says, "It is possible that some residents may be hired for timber harvest and road construction..." The paragraph for Tenakee Springs says, "It is possible that some residents may be hired...for timber harvest and road construction activities."

ZS-140 Refer to the last sentence in Response ZS-113. The dispersed recreation activities that are listed do not require the use of a motorized vehicle. All of the action alternatives construct logging roads that could be used for minor, incidental dispersed recreational activities.

ZS-141 This phrase comes from the Coastal Zone Management Act of 1972, Section 307 (c)(1)(A): "Each Federal agency activity within or outside the coastal zone that affects any land or water use or natural resource of the coastal zone shall be carried out in a manner which is consistent to the maximum extent practicable with the..." (ACMP).

In a related development, the State of Alaska, Division of Governmental Coordination concurred with the Forest Service determination of consistency with the ACMP in a letter dated March 24, 1998.

ZS-142 The word "and" has been replaced with "or."

FS Response**ZS1-1** Refer to Response ZS-110.

Sources of information have been clarified. The information was the best available to use in the EIS.

ZS1-2 Comment noted.

PO Box 55
Tenakee Springs, AK 99841
20 Jan 1998

USDA Forest Service
Indian River Planning Team
204 Siglilaka Way
Sitka, AK 99835

Dear Forest Planners:

Following up my concerns about the accuracy of your ADF&G furterer harvest data (as contained in my 16 Jan correspondence), I today spoke with ADF&G biologist Steve Peterson. As I suspected, their harvest data comes from their sealing records. According to Mr. Peterson, ADF&G only requires reporting on a unit-wide level during the sealing process, and any further accuracy is dependent upon whether the trapper wishes to disclose more precisely the location at which the furbearers were harvested. There is no way to determine what percentage of the overall harvest has been reported unit wide and what portion more specifically.

ZS1-1

Bearing this in mind, I find it highly unlikely that ADF&G would make the particular area-specific claims your DEIS attributes to them. More likely is that ADF&G said there were a certain number of furbearers reported from an area. From that statement was probably fabricated the more definitive statement that the said number represented the total harvest from that area.

At the very least, you need to change the DEIS to include the fact that this ADF&G data reflects not actual harvest rates, but only that portion of the harvest for which such area-specific information was provided. Also it needs to recognize the very incomplete nature of this information.

I consider this one misleading claim to be representative of the DEIS as a whole. Reading it I had to wonder what ever happened to journalistic integrity. The document as a whole is full of one-sided discussions, numerical miscalculations, and inaccurate (even sometimes contradictory) information. From this report as it is currently written, the Forest Supervisor could not possibly make a well-informed decision on this timber sale.

In any case, because the ADF&G furbearer biologists were not available while I was preparing my earlier comments, I could not at that time verify my suspicions about your furbearer information. Having done so, I wanted to pass that along.

Thanks for your time.

Sincerely,


Zeh Stroug

NOTES

**Transcript:
Indian River Timber Sale(s)
Project**

**ANILCA Section 810
Public Hearing
and
Draft EIS Public Comment Meeting**

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United States Forest Service

INDIAN RIVER TIMBER SALE(s) PROJECT

ANILCA Section 810 Public Hearing
and DEIS Public Comment Meeting

January 13, 1998

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1
2 to allow opportunity for additional comments. If you have not already done so, please sign
3 in at the door and indicate if you wish to present testimony.

4 "If individuals have the same testimony as others, the presenter can simply state
5 that they stand with Presenter X or Presenter Y who testified on this or that point. That
6 type of statement is just as acceptable for the record as repeating the previous testimony.
7 Also, written testimony is just as acceptable as an oral presentation. Written testimony
8 will be accepted until January 20, 1998, which is when the comment period closes.

9 "We are recording this Hearing so that we can prepare a transcript. The transcript
10 is important because it, along with all other written comments, will be used by the Forest
11 Service during the preparation of the Final Environmental Impact Statement and Record of
12 Decision for the Indian River Timber Sale(s) Project.

13 "An opportunity to discuss and obtain information about the Indian River Project,
14 and the various alternatives, was provided during the Open House which preceded this
15 Hearing. We will not be taking questions during the Hearing.

16 "Testimony will be taken in the order received on the sign-up sheet. I will call your
17 name and at that time, please come forward and give me any written testimony you have;
18 use the microphone; state your name, and affiliation if appropriate; and proceed with your
19 testimony."

20 So, before I start asking folks to come up, are there any questions?

21
22 **Unidentified Audience Member #1:** Is that going to be the date they need to be
23 received or postmarked?

24
25 **Jim Franzel:** Postmarked is fine. Any other questions? Yeah.

26
27 **Unidentified Audience Member #2:** At what point can we read testimony from
28 other people?

1
2
3 **Jim Franzel:** At what point?
4

5 **Unidentified Audience Member #2:** I'd kind of like to break up my own
6 testimony and the one I'd like to read from Lieba [indiscernible] Sunny Cove.
7

8 **Jim Franzel:** Oh. You're welcome to do that at the same time, or, you know,
9 immediately proceeding your own testimony, or preceding it, however you choose.
10

11 **Unidentified Audience Member #2:** Okay.
12

13 **Jim:** Yeah.
14

15 **Unidentified Audience Member #2:** I can't...
16

17 **Jim Franzel:** Okay. Any other questions? [pause, with noise of audience
18 members and papers moving] Okay. Mr. Mark Meyer.
19

20 **Mark Meyer:** Can I go last?
21

22 **Jim:** Well, you're going to have to ask Molly and Mr. Kennedy.
23

24 **Unidentified Audience Member #2:** Can I volunteer to read Leiba's first?
25

26 **Jim Franzel:** Well, that would be fine. Come on up. Okay.
27
28

1
2 **Unidentified Audience Member #2:** Then I can have a little break before I get
3 into mine.

4
5 **Jim Franzel:** Right here. Yeah. Here's the mic.

6
7 **Unidentified Audience Member #2:** I don't get to look at the public from.....

8
9 **Jim Franzel:** Well, if you'd like to.....

10
11 **Unidentified Audience Member #2:** That's okay. Okay. Ah -- This is Lieba
12 Shaw's testimony. She asked me to do this for her. And its about ten minutes long, so if I
13 start reading too fast, or if you can't hear me, please, somebody make a noise.

14 [Whereupon, this Audience Member #2, later identified as Molly Kemp Olmstead,
15 read Elizabeth Shaw's written statement for the record. Transcriptionist used both the
16 verbal recording and written testimony to prepare the transcript of the reader as follows:]

17 "For the record, I am Elizabeth Shaw, a resident of Tenakee Springs. I am sorry I
18 could not be at the hearing in person. If there is sufficient time at the hearing on January
19 6, 1998, I have asked Molly Kemp Olmstead to read my statement. If there is not
20 sufficient time, this statement will be submitted in writing, with the balance of my written
21 testimony.

22 I was Chairperson for the City of Tenakee Springs Sunny Cove Tidelands
23 Committee. I worked with other Tenakee Springs residents and staff of the Forest Service
24 to draft the Memorandum of Understanding that was ultimately ratified by Tenakee voters
25 in a special election in 1997. I was generally pleased with the development of the
26 memorandum of understanding. I felt that the parties tried to write an agreement that
27 would resolve at least some of the problems identified by either side. However, I was truly
28

1 shocked and then angry when I read the draft EIS. The draft EIS's references to the MOU
2 are negligently or intentionally misleading.

3 "It was no secret, during the negotiations surrounding the drafting of the MOU, that
4 the City of Tenakee Springs was only willing to use, allow the use of its Sunny Cove
5 tidelands as a log transfer facility in order to save Ten Mile Creek from being used as a log
6 transfer facility. During the negotiations and in the written representations by the Forest
7 Service staff, I as well as the voters of Tenakee, were led to believe that in agreeing to the
8 use of city-owned Sunny Cove tidelands for a log transfer facility, no other LTF would be
9 constructed for the Indian River timber sales project. The memorandum of understanding
10 reads in pertinent part," quote: "For the duration of the MOU, the Forest Service agrees
11 that it will not, directly or indirectly, develop or use or permit the development or use, of
12 alternative log transfer facility sites in connection with the Indian River Project, including
13 but not limited to sites at Ten Mile Creek, or other locations in Sunny Cove.' (MOU, Sec.
14 II C).

15 "In a question and answer document prepared by the Forest Service and mailed to
16 Tenakee voters with a letter signed by the Sitka District Ranger, the Forest Service wrote:
17 'Question: Will any other LTFs be developed in the Project Area if Proposition One
18 passes? Answer: No. If Proposition One passes, we have agreed while the MOU is in
19 effect, we will not develop any other LTFs for the Indian River Timber Sale(s) Project.'
20 Jim Franzel, Sitka District Ranger, in a letter mailed to the Tenakee voters dated January
21 13, 1997, stated: 'The Forest Service would like to use the site (Sunny Cove) for the
22 upcoming Indian River Timber Sales because, it is the most environmentally sound and
23 economical option.

24 "As an aside regarding the environmental soundness of Sunny Cove I would note
25 that the Forest Service states in the draft EIS that a marine survey completed on Sunny
26 Cove in 1996 revealed that the Cove contains more than 1-¹/₄ acres of accumulated bark
27 depositions from prior logging operations and that 0.04 acres have a depth of 10
28

1 centimeters or more. Although the draft EIS states that these levels meet acceptable
2 guidelines, a closer look at the guidelines results in a different conclusion. (See draft EIS
3 Appendix K) The Forest Service did not discuss these findings regarding bark depositions
4 with the City of Tenakee prior to the vote in 1997, nor at any later time. Nor has there
5 been any discussion in the draft EIS nor directly with the City about how this bark
6 accumulation may affect whether the Forest Service can get a permit to have a log dump at
7 Sunny Cove.
8

9 "The Forest Service pressed the City of Tenakee voters to ratify the MOU so that
10 the way would be clear for use of the Sunny Cove site. The Forest Service even agreed to
11 pay the costs for a special election so that the matter could be decided prior to the
12 development of the draft EIS. The clear statement to the City was that Sunny Cove would
13 be the sole proposed transfer facility site. The Forest Service could propose Sunny Cove
14 as the log transfer site rather than Ten Mile Creek or Sunny II because not only was Sunny
15 Cove the most economical and the most environmentally sound, but the City of Tenakee
16 had agreed to the use of its tidelands. It is totally unbelievable to me that the Forest
17 Service staff thought the City of Tenakee was entering into this agreement just in case
18 Sunny Cove was selected as the site.

19 "But perhaps conditions changed after January, 1997. Perhaps the Forest Service
20 realized that Ten Mile or Sunny II would be the preferred site. Between that decision and
21 the time that the draft EIS was mailed out, it would have been appropriate for the Forest
22 Service staff to contact the City of Tenakee and inform the city that the Forest Service had
23 decided that the Sunny Cove site was no longer "the most environmentally sound and
24 economical option", and as a consequence the Forest Service might well terminate its
25 agreement with Tenakee Springs giving its sixty day notice of termination in due course.
26 That call was the least that could have been expected from the public officials who
27 aggressively pushed for the use of Sunny Cove. It certainly should have been the course of
28 action for public officials operating in good faith.

1
2 "Another way to look at the situation is that the multiple site proposals are merely a
3 sham. The Forest Service still believes that Sunny cove is the best choice. However, in an
4 effort to appear that they will consider all options, they propose other sites. If that is the
5 case, one wonders how many other options in the draft EIS might also be mere subterfuge.
6 Options that look good but options that the Forest Service has known all along it will not
7 seriously consider.

8 "Or perhaps the whole draft EIS' presentation is so confused the draft -- that the
9 drafters truly don't know which site is being considered for what reasons. It is interesting
10 to note that the draft EIS states that for Coastal Zone Management consistency review only
11 the preferred alternative LTF needs to be considered. However the announcement from the
12 Coastal Zone Management authorities states that the Forest Service is proposing the use of
13 both Ten Mile Creek and Sunny Cove for the proposed Indian River Timber sale(s).
14 Alternative C is the preferred alternative and Sunny Cove is the only LTF mentioned in
15 that alternative. Does that mean that Alternative C is not really the preferred alternative
16 but that Alternative B is? Or is the log transfer facility site so unimportant to the decision
17 making process that any one of them will do? Or will one sale use Sunny Cove and
18 another sale use Ten Mile Creek?

19 "Or maybe the people who developed the draft EIS didn't talk to the people who
20 negotiated the agreement. Perhaps the EIS authors never read the Memorandum of
21 Understanding so they just didn't see the provision regarding Sunny Cove being the sole
22 site for an LTF under the MOU. That possibility is hard to believe because Sunny Cove
23 and the MOU are repeatedly mentioned in the draft EIS. For example, Appendix A, page
24 14: 'There is currently a, an MOU between the City of Tenakee Springs and the Forest
25 Service for use of this site (Sunny Cove) for timber sale operations.' Chapter 1, page 6:
26 'One previously existing log facility (LTF) at Sunny Cove and one new site near Ten Mile
27 Creek would be used to implement timber harvest.' (This is clearly not permitted under
28 the MOU.) Chapter 1, page 19: 'The Forest Service worked closely with the City of

1
2 Tenakee Springs in order to develop a use agreement for City owned tidelands for a log
3 transfer facility in Sunny Cove. The city ordinance approving the use agreement was
4 voted on and approved by a registered' -- excuse me -- 'a majority of registered voters (27
5 yes - 5 no) in January, 1997.' End quote. "(This statement is misleading. The agreement
6 was not approved by a majority of registered voters but rather by a majority of those
7 registered voters who actually voted. There are over 250 registered voters in the Tenakee
8 Springs election district.) Chapter 2, page 19: 'Alternative D would have the least impact
9 on recreational use of the Sunny Cove shoreline because the LTF would be only, would
10 only be used for mobilization (unloading heavy equipment from barges).' End of that
11 quote. "(There was no discussion with the City of Tenakee regarding the use of the City's
12 tidelands as a staging area for a different site. It defies logic to think that the MOU would
13 allow the tidelands to serve as a staging area for environmentally degrading another area.)
14 Chapter 3, page 6: 'The Forest Service has an agreement with the City of Tenakee for
15 reconstruction of use of this site, either as a drive down ramp or as a bulkhead.' Chapter 4,
16 page 64: 'Memorandum of Understanding (MOU) was st-- was signed by Regional
17 Forester Phil Janek and Tenakee Springs Mayor Louis Heins in November, 1996. The
18 MOU addresses concerns of Tenakee Springs residents regarding use and occupation of
19 City-owned tidelands in Sunny Cove. Sunny Cove is located approximately 3 miles
20 southeast of the City of Tenakee'" (-- Actually, Sunny Cove is located within the city
21 limits. Um -- Previous harvest of the Indian River -- back to the quote: "'Previous harvest
22 of the Indian River, Ten Mile Creek, and Freshwater Creek drainage's was accomplished
23 utilizing an LTF site in the cove. This site was last used in 1986.

24 "The MOU specifically addresses the use of the tidelines at, tidelands area at, and
25 adjacent to, the former LTF site, and documents compensation to be paid to the City of
26 Tenakee Springs for use or occupation of their tidelands -- See Appendix C for mitigation
27 members, measures requested by the City of Tenakee Springs and reque -- addressed in the
28

1
2 MOU.' Appendix C, page 5: 'The following mitigation measures are requested by the City
3 of Tenakee Springs are also addressed in the MOU.' Now here's the list of those:

4 "No logging camps are allowed within the city of Tenakee Springs.'

5
6 "The East Tenakee Trail, within the road right-of-way, will be properly maintained
7 and protected by the Forest Service against impacts that may render it impassable
8 or difficult to use as a result of logging activities.'

9
10 "Vehicles traveling within 0.25 miles of the LTF and East Tenakee Trail will be
11 limited to a maximum speed of 10 miles per hour.'

12
13 "Vehicles and other machinery operating near the LTF will be muffled so as to
14 comply with applicable federal and state standards.'

15
16 "Use of helicopters at the tidelands area will be limited to emergencies and other
17 non-recurring situations, and they may not be used for timber delivery or routinely
18 fueled on the site.'

19
20 "Notice of blasting activities shall be posted in Tenakee Springs and guards will be
21 utilized on the trail when blasting activities are conducted.'"

22
23 "Quite a list. A list that had to be culled from diverse provisions in the MOU. A
24 list that could not have been developed without reading the entire MOU. But no mention
25 is made in the draft EIS that the Sunny Cove tidelands may be used under the MOU *only*
26 [reader's emphasis] if it is the sole log transfer facility.

27 "It is clear to me that the draft EIS contains only information about the MOU that
28 benefits the Forest Service position. It is inconceivable to me that the fact that the Forest

1
2 Service agreed that the Sunny Cove would be the only site, would be deleted from repeated
3 references to the log transfer facilities in general and Sunny Cove in particular.

4 "I have been involved as a public official in various negotiations throughout my
5 work life. Many of them have been between adverse parties. Interests were in conflict and
6 the goals were desired by parties were different. Despite these differences, as a public
7 official I was expected to deal fairly with other government officials or private parties
8 regarding the matters before us. To withhold needed information would have been an
9 abuse of my public trust. The persons who represented the Forest Service in the MOU
10 negotiations have abrogated their public trust. Either intentionally or through negligence
11 they misled the City of Tenakee and its voters. In development of the draft EIS they
12 developed the public by providing only partial information regarding the use of Sunny
13 Cove. This information is not just an interesting collateral fact, but is essential to the
14 public's decision making process. In my estimation the Forest Service has tainted the
15 entire EIS process. If the Forest Service misleads in one important area regarding this sale,
16 they can mislead in another area. The public, including Tenakee Springs, can only wonder
17 what other information is missing from this document. The Forest Service had no
18 difficulty providing information from the MOU regarding how they would abate noise,
19 protect against pollution, or control vehicular traffic. All statements that make the Forest
20 Service appear as if it is taking environmental and safety issues into account to the benefit
21 of Tenakee Springs. The reality is quite different.

22 "I am sorely disappointed with my contact with the Forest Service regarding this
23 matter. As a relative newcomer to Tenakee I didn't come to the negotiations with a
24 preconceived notion about timber sales or the EIS process. After having been a public
25 employee for nearly two decades I naturally identified with the difficulties that public
26 employees face in balancing the varied and often conflicting interests of the public.
27 However, my experience with working with the Forest Service leads me to believe that the
28 culture in this agency allows the employees to tailor the facts to meet their own ends...a

1
2 practice that when discovered leaves the public with little recourse other than to resist
3 rather than to cooperate with future Forest Service initiatives.

4 "The remainder of my testimony, which I will submit in writing along with a copy
5 of this statement, contains other comments that I have about the information regarding the
6 purpose and need for the proposed sale and particulars regarding the effects of the five
7 action alternatives."

8 This was Leiba Shaw's testimony, if anybody came in late.

9
10 **Jim Franzel:** Thanks, Molly. Let's see, Mr. Kennedy.

11
12 **Mr. Kennedy:** I'll be a little briefer than Leiba. Ah, I'm Dan Kennedy, resident of
13 Tenakee Springs.

14 I guess that the main thing I wanted to comment on on this particular sale, and
15 trying to avoid things in general, was the ah, the deer habitat around 10-Mile Creek, and
16 how critical that is, especially in, ah, harder winters. The area back up in there is like a
17 feed lot for deer if you go up there this time of year. And, you know, with proven adverse
18 impacts of clear cuts on deer populations, it seems like that there's probably been enough
19 timber taken out of that area. The other thing is, ah, this does little or nothing for, for
20 Tenakee. You know, the jobs it creates will not be jobs created here. Ah, the environ --
21 the environmental impacts it creates will be felt here.

22 I'd like to see, umm, things go back maybe to a smaller scale. I was real
23 encouraged today, I got a salvage sale announcement in the mail and there were some
24 really small, 10,000 board foot salvage sales, what are new. I've never seen anything
25 offered quite that small, which is something we should probably be thinking about doing
26 up the Indian River road systems, also. I think ah, this town could make a real good living
27 off standing dead and dead and down timber that's around all of the clear cuts that are
28 existing up there. And, with the current state of the, ah, log market, I know, I have a beach

1 salvage permit I can't get peanuts for logs, ah, pulp utility logs, I don't know where that's
2 going in, why I guess Prince Rupert's the closest place to take them and there's not much
3 money being paid for 'em.
4

5 So I really question the need for this timber at all. Ah, what need is it filling? Is it
6 going to cost us more money to degrade our environment, and if so, who's benefiting?
7 Thank you.
8

9 **Jim Franzel:** Okay. Thanks Dan.
10

11 [Applause from audience.]
12

13 **Jim Franzel:** Okay. Mr. Mark Meyer.
14

15 **Mr. Meyer:** My name is Mark Meyer, and I'd like to go on record as supporting
16 Alternative A: No Action.

17 Especially for the impacts that most of all these other sales would have on
18 subsistence and the personal use of fish and game in the area, ah -- the 10-Mile area, I
19 know, is used, ah, quite a bit ah, for subsistence use: hunting and fishing, there's also
20 shrimp and crab taken there commercially, ah, and ah, more and more as I live here I
21 notice how many people ah, make some or all of there living from ah, fishing. And there
22 is a very large fishing fleet ah, in, that uses Tenakee Inlet, they're not necessarily based
23 here. Though, there are several fishermen based here.

24 And, and, I'm not a biologist, so I can't say you know, this amount of harvest
25 affects, and this amount of timber harvest affects this amount of fish and game harvest, but
26 um, I guess I'll just have to give my opinion, which is that, that ah, the 10-Mile, or the
27 Indian River, whole Indian River/10-Mile area as you view it, already looks like its been
28 harvested. There's a lot of clear cuts there already. I wasn't here before the clear cuts, so I

1
2 can't say, you know, the fishing used to be better, or the hunting used to be better. But
3 there are many, many studies and many, many opinions that seem to say that timber
4 harvests do affect the wildlife resources in those areas of the harvest and can adversely
5 affect them, ah, severely. umm.....

6 I'd also like to comment on the, the recreational use and also tourism. Ah, in ah,
7 well -- Tourism in Tenakee is a, just, its doing pretty well and its growing. In the five
8 years that I've been here, there are now, ah, when I first came here there were no, ah, I
9 guess there was one, ah, fishing guide. And now there's two very active operations that are
10 spec -- that are exclusively in Tenakee Inlet, and then another couple other operations that
11 come in and out. There's also um -- that's right, there's also a commercial hunting ah
12 guides that use this area. Um -- and I'm not, I can't say that they concentrate specifically
13 on the Indian River area, but I do know that, that they are in the area. Ah, so, those also
14 could be affected. I know, the um, the, when I was mentioning the tourism, I think the
15 most adverse affect would be the helicopter logging and the noise impact of the helicopter
16 logging on tourism. ah -- Many of those, um, those people that do go out on the
17 commercial fishing, or, not the commercial, sorry...the um, on the sport fishing, ah, with
18 the sport fishing guides, ah come back into town quite early in the afternoon and will also
19 take a stroll out to Indian River to, to view bears, um, that I think would, their experience
20 I'm sure would be impacted by helicopter noise. um -- Also, any, any local use of the area
21 would be um, affected by helicopter noise, and also by probably log trap noise, ah, heavy
22 equipment noise. I know when, on calm days we could hear the log loaders over at Corner
23 Bay. um -- And when they, they were helicopter logging on the, on the mountainside over
24 there, it was, ah, a pretty, it was, on a calm day it was also quite noticeable. so, I'm sure that
25 it would be many scales louder, this being this much closer. um.....

26 I also would like to go on, ah, record saying that, um, I favor a very conservative
27 harvest of our natural resources. um -- I do know that I'm not against logging, per se, I like
28 the concept of selective harvest, um, and minimal impact harvest. Although, that is

1
2 probably helicopter logging. I know its kind of, ah, talking on, its not real consistent there,
3 but, ah.....

4
5 [Tape 1, side A ends.]

6 [Tape 1 flipped to side B; transcriptionist says "go ahead"]

7
8 **Mark Meyer:** Okay, ah -- conservative [indiscernible - audience cough]

9 That, um, there is a lot of really nice timber in, in, still in these areas. I'm, ah, I
10 won't say a lot, a lot, but there is quite a bit and I would like to see a very conservative use
11 of that timber. ah -- Old growth hemlock is very nice. I have used it personally in my own
12 dwelling, and ah, it would be nice, um, as Dan was saying if there were some small, very
13 small sales in this area. I am not a logger. I don't really care to go out and get my own
14 logs, but if there were ah, hemlock available, I would certainly use it -- ah -- Locally, if it
15 was locally available, I would certainly buy it. um -- And that doesn't seem to, there
16 doesn't seem to be any, ah, at least that I can tell, real small scale, ah, proposals in any of
17 these alternatives.

18 um -- I know there's other things I'll probably want to say, but I can't think of any
19 of them now, so thank you for the opportunity to testify.

20
21 **Jim Franzel:** Okay, thanks, Mark. [pause, audience noises & coughing] Molly,
22 would you like to go now? Or, would it be, I have some others if you want to rest a little
23 longer?

24
25 **Molly Kemp Olmstead:** Not really. [indiscernible]

26
27 **Jim Franzel:** Okay, go for it.
28

1
2 **Molly Kemp Olmstead:** I actually have a little show and tell [Indiscernible -
3 sounds of walking and paper.]

4 For the record, my name is Molly Kemp, I've been a resident of Tenakee Springs
5 since 1976. Ah -- I was a member of the committee that worked on that MOU that
6 [indiscernable] described at length. I have to say that when I, at the beginning of those
7 negotiations, I genuinely felt it was time, you know, to sort of bite the bullet here in
8 Tenakee and accept another dose of industrial strength clear-cutting just to ease the
9 transition to a different kind of management. It was, No part of that process was easy, but
10 I, along with the other committee members felt that I participated in good faith and with a
11 sincere hope that the new, that a new chapter was opening in dealing with the Forest
12 Service.

13 I'm not going to go over every point that Leiba made again, but there are a couple
14 things I want to add about the MOU. There were two conditions I felt were essential
15 before it would be possible to agree to the use of that LTF at Sunny Cove. One was no
16 logging camp in the city limits provision, and the other was that if we use Sunny Cove
17 again, there would be no LTF at 10-Mile. I think that was all made very clear in the
18 negotiation process. I couldn't believe my eyes when I read the DEIS and found that there
19 was no mention of that 10-Mile provision.

20 Its ah, its hard to describe how, how I feel about the discrepancy there is between
21 the people who come from the Forest Service for a process like that and then citizens who
22 participate. You know, Forest Service personnel are, are paid employees. You're getting
23 a, they're getting a salary to attend meetings, they get benefits, vacations, its their job.
24 And, that's one thing. It, ah... A meeting, coming to a meeting all day essentially means
25 they get to leave their offices for the day. On the other hand, people who participate as
26 citizens have to take away from work, from subsistence, from family obligations, from
27 everything else in order to participate. The, Those sunny summer days are incredibly
28 precious, here. And the days that Leiba, and Bob Pegues, and Diane Zeal and I spent in

1
2 this room, pouring over that MIU [sic] were days that we had to take away from
3 employment income, from working on our gardens, from collecting and preserving food.
4 For the Forest Service, they're just another way to put in hours. To us they were a genuine
5 sacrifice made in the hope of actually solving problems cooperatively.

6 Another point is, that those of us who live near the Sunny Cove LTF had to make
7 an agonizing personal decision: how to vote on that MOU. Do we vote to protect our own
8 interests? Or, do we give up our peace and quiet for the greater good of the community and
9 the area of 10-Mile? Its not a theoretical problem for us. Its not lines on a map, or its a
10 signature, or a signature on a permit. For us it means there will be probably five years of
11 intense helicopter noise. I live directly across from Corner Bay. I know exactly what it
12 will mean to have those giant helicopters commuting up Indian River every day. When
13 they were cutting on the point at Corner Bay, it seemed like we heard every blade rotation.
14 In the mornings it sounding like they were taking off in our living room. In this proposed
15 operation, they'll be taking off from there and coming toward us. Its not a great way to
16 start the day. It also means more disruption and hazard on the trail. And, doubtless
17 another struggle at the end of the sale to get even a minimal amount of clean-up done.

18 We know what it means to have an LTF at Sun, Sunny Cove. We lived with it
19 before. Everytime we have to wade through the snow in the winter, like right now, where
20 it was previously covered, we are reminded that the impacts of, of the Sunny Cove LTF
21 were not exactly temporary. It wasn't easy to vote "Yes" on that MOU. I did it because I
22 genuinely believed it was the best thing for the big picture. And it was, ah, very
23 disappointing to, to have one of the primary provisions of it not even mentioned in the
24 draft. umm.....

25 Purpose and need is one of the points I wanted to bring up. I think I'd like to, other
26 people are going to talk more about the timber supply equation, but I do want to read from,
27 ah, Chapter 1, if I can find it here about the, the idea, one of, one of the objectives that is
28 felt to be that the Forest Service says this sale will help further is ah, improving timber

1 growth and productivity on suitable timber lands. And, its interesting that Mark mentioned
2 Hemlock, because here at the bottom page, Chapter 1, page 3, ah, it talks about how most
3 of the old growth is Western Hemlock, and its prone to disease and in addition, Western
4 Hemlock has the lowest economic value of the three major commercial tree species in the
5 project area. And the hope that by harvesting existing stands of Hemlock, they can
6 encourage Sitka Spruce and Yellow Cedar, which is a kind of a interesting point since
7 Yellow Cedar is not very easy to regenerate and grows extremely slowly.
8

9 However, the point I wanted to make, and why I brought this in: people always
10 accuse me of bringing.....

11 [sounds of unwrapping something and movement]

12everything including the kitchen sink to these things, but today I just brought the
13 kitchen cabinets.

14 [audience chuckles]

15 I wanted to show here, and for the record, this is our kitchen cabinet door, which
16 was just completed by my husband of old growth Hemlock. It's beautiful wood. It is very
17 different from second growth. It is fine grain, even grain, perfectly clear. And even a tree
18 with defect, even a tree that has a rot in the center can produce this kind of wood. You
19 don't get this from second growth. You can't replace this kind of wood with a two by four
20 of knotty Spruce with half-inch growth rings. End of show and tell.

21 ah -- My notes aren't as well organized as Leiba's, I'm afraid. But, ah.....

22 One of the other points that I wanted to make since this is a subsistence hearing,
23 was kind of a general tone of discussion of subsistence in the DEIS. So mu -- So many
24 aspects of life in Tenakee, and other remote communities in Alaska fall in that category:
25 relying on locally harvested food, fuel, other resources instead of being a slave to the cash
26 economy, its a valid, honorable choice and its one that I think most of us feel extremely
27 fortunate that we still have an opportunity to make here. Its also a lot of work. What is
28 distressing is that the kind of dichotomy in the DEIS that timber industry jobs, whether its

1
2 pulp mill jobs or large scale log, logging operations, those are jobs. But working for
3 yourself here, whether its subsistence or in tourism, or in small scale value-added
4 manufacturing, that's a lifestyle. Ketchikan has jobs. Tenakee has a lifestyle. The DEIS
5 acknowledges that the logging will result in losses to the current tourism businesses. But
6 then concludes, I guess, that those jobs just aren't as important as a year or two of short-
7 term profit to a non-local operator who will add nothing to our economy.

8 The trail. ahh -- We've brought that up over and over again, and again, I was very
9 disappointed to see that in the DEIS the only way the East Tenakee Trail is mentioned is in
10 the context of recreation. Now, I really enjoy walking on the trail and, that doesn't negate
11 the fact that I really have to. That's I think probably three or four times a week this past
12 month and its been primarily on the trail. Its ah, kind of frustrating to have it never
13 acknowledged as a primary transportation corridor, which it is. And, I had to read too, this
14 segment in, ah, again I had to find it in the recreation area of the EIS: "In all
15 [indiscernible] the trail use could be disrupted during re-construction", that's just a phrase
16 pulled out of the, out of context, and I realize the dangers in that, but, I have to pull
17 another one out of context, that says, ah: "However, other recreation opportunities exist in
18 the area, such as the West Tenakee Trail that could be substituted for use of the East
19 Tenakee Trail." That's not a lot of consolation when you live in East Tenakee and rely on
20 the trail to get from point A to point B.

21 There's another section in this that I found quite distressing. Ah...regarding this
22 sort of attitude that runs through the EIS. ooh -- There's a section on page, Chapter 3, page
23 45 which states: "The community considers itself unusual because members have agreed
24 to limit their personal freedoms to maintain a certain lifestyle." There's lifestyle again.
25 And, ah, that doesn't set very well with me. There, in my idea of how democracy works is
26 that you elect citizens to formulate laws for the common good. I don't see that that is
27 giving up personal freedoms. I guess you could be argued that laws that prohibit murder
28 and robbery also constitute a voluntary sacrifice of personal freedom. I don't see anything

1 particularly wrong with that either. The same section also describes the voluntary
2 segregation of bath house hours as another infringement on personal freedom. I can't help
3 but wonder what alternative the authors would find more desirable.
4

5 Tenakee's decision to prohibit automobiles is based on valid, carefully examined
6 cons -- considerations. So is the city's long-standing opposition to being connected to the
7 Hoonah road system. I don't need to justify that opposition to the Forest Service. We
8 proved that point in Congress. And the Tongass Timbus -- the Tongass Timber Reform
9 Act prohibits the Forest Service from making that connection, or from making any further
10 efforts to make that connection. I don't know how many people had a chance to examine
11 the map, but the amount of land that separates the two roads under all the action
12 alternatives but one, would be reduced to about three quarters of a mile.

13 A couple years ago we had a polite delegation from the Forest Service come to
14 Tenakee to ask permission to construct a bike path between Game Creek Road and Indian
15 River Road. The Forest Service recognized at that time that the Tongass Timber Reform
16 Act requires the consent of Tenakee and of Hoonah before any connection can be made.
17 The City Council politely, but firmly, denied that request. I was on the Council at the
18 time, and we felt that a connection of any sort would be an unacceptable breach of the
19 Tongass Timber Reform Act. When this draft came out and I looked at the maps, I
20 contacted one of the recreation specialists who worked on that proposal. I figured he
21 would be familiar with the terrain. I've never been there myself. He agreed to check his
22 notes against the maps in the draft, and later confirmed that the proposed road construction
23 would bridge all the gullies and ravines that precluded ATV access so far. His first
24 reaction was: I didn't really need to worry because there were these -- ah -- fairly deep
25 gorges there. And then he went and checked his notes against the maps and concluded that
26 they would all be bridged. All that would remain would be about three quarters of a mile
27 of flat terrain. I think anybody in Forest Service management knows as well as we do that
28 ATV safaris will inevitably make that connection is there isn't a physical barrier. And

1
2 maybe there's a legal theory somewhere in the Forest Service that once that connection is
3 made, the road prohibition in the Reform Act will be voided. And its, it will be possible to
4 connect the roads as has long been sought. Its not hard to imagine that, even though it
5 sounds a little paranoid, since the Forest Service still refuses to disclose a long term
6 transportation plan.

7 I don't know, folks who haven't, have been here during the, some of the history on
8 this road connection issue can appreciate how deeply this is felt by people who have had it
9 on their plates for a long time. During the Reform Act, a lot of people spent time in
10 Washington. I spent over two months. We sought out precedents, and found, yes, there
11 are other communities that have successfully fought off Federally financed road
12 connections, and given up their personal freedoms by eliminating automobiles. It was
13 really gratifying to finally get that protection written into Federal Law. And I don't think
14 we can -- ah -- the Forest Service can expect us to quietly accept a backdoor approach to --
15 ah -- negating it.

16
17 [Applause from audience members.]
18

19 **Unidentified Audience Member #3:** We won't go away.

20
21 **Molly Kemp Olmstead:** And I guess, [indiscernible] to say, I'm really
22 disappointed in this draft. I really had hoped that we were sort of turning a corner in
23 relationships with the Forest Service and the, and although the transition to a different kind
24 of timber industry might be difficult, we could, we could kind-of work on it cooperatively.
25 But I, I really was dismayed with some of these short-comings, and I really hope the Forest
26 Service will reconsider, reproduce a different version. Thank you.

27
28 [Applause from audience.]

1
2
3 **Jim Franzel:** Okay. Thanks, Molly. Harvey Kortman.

4
5 **Harvey Kortman:** My name is Harvey Kortman, P.O. Box 45 Tenakee Springs. I
6 didn't know I was supposed to have notes, so -- ah.....

7 I agree with -- ah -- Mark and Dan Kennedy about the wildlife concerns. My main
8 objection on this is: Why are we doing this at all when there's no world market for this
9 timber, there's no Alaska market for this timber. There isn't any market for the timber, so
10 why are we selling our trees now when we could hold them and sell them in the future
11 sometime when there is a market. It seems just real ridiculous to be selling this ah -- old
12 growth timber and everything that goes with it at pulp markets when someday we could get
13 real, a real market for it. Thank you.

14
15 [Audience applause.]

16
17 **Jim Franzel:** Thanks Harvey. [pause] Don Overmeyer.

18
19 **Donald Odenheimer:** Donald Odenheimer.

20
21 **Jim Franzel:** I'm sorry. Don Odenheimer.

22
23 **Donald Odenheimer:** Hello and thank you for the opportunity to speak among my
24 friends, here. Its not often that we get together and we come behind something we can
25 rally on, and pull ourselves together here. This is neat. I'm very happy to be here, and
26 thank you.

27 I realize you're ah -- here, I think you're here with an agenda. I do believe so, and
28 see it on the wall there. And ah -- its not all bad. There are some good parts to it, and I

1 think that's what this process is about, to find the good that is there, pull it out, and make it
2 work. For us, and you, too. You know, you want it to work, and we want it to work.
3 However, its gonna to take some working together and some give and take in order for that
4 to happen, in my opinion.
5

6 Since you give me an hour to talk, I'm gonna to sp -- talk.

7 The first thing I think you need to do is, you need to keep the road building to a
8 minimum. I applaud our President, in sayin' that he realizes that road building is not
9 necessarily conducive to our plan. Shame on our Governor for not wantin' to come in and
10 include the Tongass in on it. Because I think, in all honesty, I think your road building is
11 your, its your legacy, but its, its not a good one. Its not a good one.

12 We want timber, we want to harvest, we want to do it, YES. But at a slow, slow
13 pace that we can maintain, our kids can participate in, and our animals can live on it and
14 we can subsist. Now, if you guys come in here with your log dumps and your road
15 building, you're not lookin' out for us. You're looking out for somebody else, its not us,
16 we're not the ones. But I'm here to tell 'ya: HEY, we care. These people care. We don't
17 want log dumps, we don't want roads. We want some timber in a small scale and we'll do
18 good with it. We'll do good with it. But you just have to scale it down. Slow down.

19 ay ah -- That's my main thing, is slow down. Your alternatives -- and ah -- you
20 haven't got it -- I'm not ah -- and you dah -- you don't have it pinned down to A, B, C or D.
21 But you do, your asking, and that's good. I want you to slow it down, no roads, and forget
22 this inter-island connection bullshit. We're not goin' there, we don't want to be part of it,
23 and ah -- its actually threatening. It is threatening to our lifestyle. Please, keep the roads
24 to a minimum and no more log dumps. No more log dumps. Please, no more log dumps,
25 no more roads. But you know, smaller scale harvest, yes. Harvest all the waii, all the way.
26 Let's, let's have some, but keep it small. Keep us where we can participate and have some
27 impact on it, because everyone here is for it, we're not against it, we're for it. Not the
28 mega-project, no. Keep it small, no roads, please. Thank you.

1
2
3 **Jim Franzel:** Thanks Donald.

4 [Audience applause.]

5 I can't read the first name of this next person, but I think its Dean?

6
7 **Unidentified Audience Member #4:** Yeah, Dean [indiscernible].

8
9 **Jim Franzel:** Wisenbaugh.

10
11 **Dean Wisenbaugh:** umm -- okay. I personally would rather support Alternative
12 A, because it, its no logging. And -- 'cause, you know, if you do log, its gonna just, gosh,
13 screw things up, one way or another, you know. And -- oh no -- okay, picture it like this.
14 This is our back yard and your neighbors backyard. And you grow some flowers and they
15 grow some flowers. Well, they cut down their flowers and sell 'em. But you've still got
16 yours. And they want to get your flowers to sell 'em. So, what do you do? Do you sit
17 there, well, um -- give 'em to 'em, or do you sit there and go "Yeah, right!" You know, sell
18 'em yourself, or you sit there and admire them because they're pretty. That's kinda how it
19 is with trees, you know? And I'm probably not making any sense, so that's all I have, okay?
20 Okay.

21
22 [Audience applause.]

23
24 **Jim Franzel:** Thanks Dean. John Wisenbaugh.

25
26 **John Wisenbaugh:** Evening. My name's John Wisenbaugh. I've been a represent
27 -- ah, resident of Tenakee Springs fer, since 1973.
28

1
2 The ah -- Section 101 of the TTRA requires the Forest Service to seek, to meet
3 market demand consistent with multiple use and sustained yield. That's the premise that
4 begins any timber sale. Market demand is determined by a projection of timber demand,
5 by ah, its a National Forest Sciences Lab, I think. Currently, a couple a fellows, Brooks
6 and Haynes did a report in 1997. They projected a mid-level harvest demand of 133
7 million feet, assuming an improvement in the industry ability to use low grade wood. To
8 this point there's no evidence of the improvement in the industry. The final draft of the
9 study lowered the demand even further, at least in the near term.

10 The stated goal in this EIS is to have a three year timber supply under contract and
11 a three year timber in the NEPA process. That would be a total of 800 million board feet.
12 Currently, there's 500 million board feet under contract. Three hundred million board feet
13 of which is to KPC. The Draft EIS proposes to remove KPC from consideration as the
14 industry as a whole, and say that we need another 200 million feet. But 500 million feet
15 and you have to consider KPC as part of the industry, [indiscernible] only the significant
16 portion of the installed capacity in Southeast Alaska. Five Hundred million feet under
17 contract is 125% of the projected market demand.

18 We currently have, without this sale, 600 million board feet under the NEPA
19 process. That's 200 million board feet above the stated goal. That makes a total of 1.1
20 billion board feet, either under contract or under the NEPA process, when the stated goal
21 of this Draft EIS is to have 800 million feet being considered. It states that 51 million feet
22 is the Chatham area's projected yield for the next ten years. Fifty-one million feet per year.
23 I guess that this assumes, on a sustained yield basis, that there is still left available for
24 harvest $3\frac{1}{2}$ billion board feet in the Chatham area. The Chatham area currently has 174
25 million feet; 25 million feet more than the three year goal that you say you need under the
26 NEPA process. I don't see that you've shown any need for this sale at this time.

27 NEPA requires the Forest Service to consider a range of alternatives. This Draft
28 EIS has failed to do that. The alternatives considered are all almost the same, less than 5

1 million board feet difference. There are some differences in harvest methods, etcetera, ah
2 -- And one that's overall spread is 12 million board feet.

3 The Memorandum of Understanding signed with City was ignored, apparently.
4 Only two alternatives that ah...are able to be considered with the MOU in place, because
5 only two alternatives only use the Indian R -- ah -- Sunny Cove log dump. Alternative B
6 has the most timber harvest projected with alternatives to clear cut, something that we've
7 always asked to see happen, but it was eliminated, apparently because it proposed an LTF
8 at 10-Mile, which of course can't be done with the MOU.

9 Ah -- we seem to have ignored the provisions of the TTRA by building a new road
10 so close to Game Creek as to make it easy for the ATV's to negotiate.

11 I would request that you consider Alternative A. Put this sale on the shelf until you
12 can show that there is a need and ah -- the purpose for this sale. Ah -- I would like to see
13 you develop a full range of sales down to as small as 10,000 board feet, or a provision to
14 make those sorts of sales.

15 We'd like to see some ah -- some area set aside as a community reserve,
16 development reserve for the long-term use of the community of Tenakee Springs. This is
17 the most accessible timber to us in the, in the forest. And if you look at the range of
18 alternatives and the clear cuts along the roads, ah -- there isn't virtually no timber left
19 accessible from the road itself for a small, very small scale operator.

20 Ah...Eliminate units in VCU 2041, and stop the road someplace before an
21 impassable canyon, so that we don't defacto connect the road to Game Creek. Eliminate
22 units that are on some sub -- unstable soils. The maps seem to indicate that all of the
23 unstable soils end at the edges of the units.

24 [Tape 1, side B ends]

25 [Tape 2, side A inserted into recorder; Transcriptionsist: "Okay, proceed. Thank
26 you."]
27
28

1
2
3 **John Wisenbaugh:** [testimony continued from above]

4 Please eliminate road 75007, the Freshwater Creek drainage. Ah...One side of that
5 valley is supposed to be managed as old growth habitat. The other side has two miles of
6 road to take out a million and a half feet of timber. That's a lot of road for not a lot of
7 timber. It doesn't seem to me it would be impossible to just remove that road and those
8 three or four clear cuts from the sale.

9 I would ask you to remove this sale from further consideration, at least until you
10 can show a real need for it. Presenting this document with its limited range of alternatives,
11 and in light of the MOU approved over a year ago, seems an insult to Tenakee Springs.
12 Because there is a significant possibility of a significant restriction of subsistence use of
13 deer for residents of Tenakee Springs, NEPA requires this Hearing. Most of us feel that
14 you're not here because you care what we have to say. Presenting this draft after recording
15 our comments during the scoping shows this. I, too, am quite disappointed with this
16 document and hope that it can be corrected in the final draft. Thank you.

17
18 [Applause from the Audience.]
19

20 **Jim Franzel:** Thank you, John. Vicki Wisenbaugh.
21

22 **Vicki Wisenbaugh:** My name is Vicki Wisenbaugh. I've lived in Tenakee Springs
23 for 16 years. I've been the ah...Coordinator of Tenakee Historical Collection since 1984.
24 Because of my interest in local history, I looked over this DEIS with a different
25 perspective from most folks.

26 Looking through the Road Cards I see, under the Heritage heading, that Road 7500,
27 is in the High Probability Zone for archeological importance. It is also noted that the, in
28

1
2 the, the Field Review is "In Progress". This document's dated November 1997. I would
3 like to know if this Field Review been completed.

4 The Road Card for 75002 remarks, quote: "Approximately 200' of East Tenakee
5 Trail would be relocated in Alternative F." The East Tenakee Trail has been determined
6 eligible for listing to the National Register of Historic Places. Alternative F is the only
7 alternative that would have a direct effect on any historic property. A Determination of
8 umm, Adverse Effect has been completed as outlined by 36 CFR 800 and the State
9 Historic Preservation Officer has concurred with this determination. For this reason I feel
10 Alternative F should not be considered at all.

11 The "Summary of Heritage Sites in the Indian River Project Area" (Table 3-29)
12 shows seven heritage sites found within the Project area. "These sites are considered to be
13 important cultural heritage elements. Combined with other heritage resources on the
14 Tongass National Forest, they contain information important to the study of cultural
15 patterns...and environmental conditions...".

16 The Alternative I prefer, of those given, is Alternative A.

17 I'd also like to read for Bob Pegues.

18
19 **Jim Franzel:** That's fine.

20
21 **Vicki Wisenbaugh:** It says [Transcriptionist utilized submitted written testimony
22 to supplement this portion of verbal testimony, as some sections of the verbal testimony
23 were read in an unclear manner, and difficult to transcribe from the recording.]:

24 "Robert A. Pegues, P. O. Box 61, Tenakee Springs.

25 "Dear Supervisor Morrison:

26 "Thank you for the opportunity to offer this statement for the Record regarding the
27 Indian River Sale Proposal.
28

1
2 "The scheme illustrates the old truth that no matter how much things change, they
3 remain the same. It reminds me of something said at a meeting with the Forest Service,
4 here at the Shamrock, some years ago: the problem is -- that the Forest Managers can't see
5 the Forest for the Trees.

6 "Your proposal confirms that is still the problem.

7 "The Summary concludes, under Purpose and Need, that 'Harvesting aging stands,
8 including those in declining health, on lands that allow timber harvest, and replacing them
9 with faster growing, healthy stands will reduce volume loss associated with decay and
10 disease and increase the growth and yield of the managed Forest Land.'

11 "And yet, immediately preceding, one is told that 'disease and decay processes are a
12 natural part of forest ecosystems, and play a key roll in providing wildlife habitat in old
13 growth forests.'

14 "It appears from your conclusion that increased production wins out over wildlife
15 habitat. It is obvious to me that 'getting out the cut--no matter what the cost' is still
16 priority-one at 204 Siginaka Way. I suggest such single purpose preference is more
17 appropriate to managing a tree farm, not a National Forest.

18 "Your reliance upon computer models and demand scenarios is faulted. It certainly
19 failed the test when the market left your recent offering waiting at the alter, despite the
20 enticement of the usual road credit dowry.

21 "Plainly, market demand and tree farming do not justify either a purpose or need
22 for this project.

23 "It is clear that the action alternatives, while cloaked in differing techniques and
24 locales, are all based on large scale logging. None provide sustained availability of timber
25 for local, small scale value-added manufacturing.

26 "It is no less clear that all the action alternatives will likely have adverse effects on
27 the local economy. The Summary itself indicates so in its 'economics' discussion, relating
28 to local tourism related businesses.

1
2 "It fails entirely to address the visitor trade generated by private and commercial
3 boats and yachts, which, by any measure, dwarfs the locally owned operators, and
4 contributes mightily to the local economy. This is a serious omission, which speaks
5 directly to the reliance on computer models such as IMPLAN.

6 "Other computer models, and their Forest Service devotees, assure us, under social
7 values, 'that no reduction in sport deer bag limit or season is expected as a result of this
8 project.' Yet one earlier learned 'considering cumulative effects, it is projected that there is
9 a significant possibility in all alternatives (including the no action alternative) of a
10 significant restriction for subsistence use of deer.' In the short term weather is blamed, in
11 the long term more people seeking less deer. Perhaps because of less habitat? The report
12 fails to answer the question.

13 "And it fails to include the cumulative effects on the deer population as a result of
14 the pending Finger Mountain sale. Yet both sales will jointly determine the availability of
15 deer for subsistence and sports hunters in Tenakee Inlet.

16 "Habitat, and its loss -- past, present and future -- is what matters most.
17 Deplorably, this simple, fundamental fact is left out of the equation.

18 "It's a unique kind of math that move backward, propped up from the desired
19 bottom line, by dubious computer models. But, how else can you have it both ways? The
20 Forest Service tries, but it just doesn't add-up.

21 "Mainly, it doesn't work because the Forest Service failed to incorporate step-one
22 for the implementation of the revised Tongass Plan -- collaborative stewardship with the
23 local community.

24 "Was there collaboration in the development of the M.O.U. for the Sunny Cove log
25 dump? Assuredly. Is it reflected in the DEIS? Hardly at all.

26 "The proposals for additional log dumps at Ten Mile and Sunny Two illustrate how
27 responsive the Forest Service was to our collaborative effort, and how it treats with
28

1
2 disdain, not only that effort, but our citizens who voted to affirm the Memorandum of
3 Understanding.

4 "The plans for the various Action Alternatives vary in style, but not in substance.
5 Constituting an obvious predilection for large scale logging activities, and certainly not the
6 consequence of collaboration.

7 "Although a statutory prohibition prevents a road link to Game Creek, it hasn't
8 prevented plans for bridging the remaining ravines; collaboration to be left in the dust as
9 the ATV's roll by.

10 "Collaborative efforts to lessen helicopter noise by establishing flight access
11 corridors will, and can, only work if the forest Service adheres to the other provisions of
12 the M.O.U., which it proposes to do in only one of the Action Alternatives. To dismiss the
13 day to day operational noise as 'negligible' is not correct. It will be noticeable, and quite so
14 in the off-shore breezy, nice days of summer.

15 "Despite our best efforts, the future of the East Tenakee Trail is more uncertain.
16 Not only is it an important recreational asset, it provides the only land access to 23 homes,
17 and almost as many lots, awaiting development.

18 "Recreation aside, the Project plan ignores the necessity of the trail to provide a
19 basic transportation link to many home owners. This cannot denote collaboration as any
20 responsible person would describe it. Yet one Alternative would be, would go so far as to
21 entirely move the trail.

22 "The DEIS is silent as to the extent of any investigation to locate, identify or
23 quantify Karst resources. I suggest the focus of blind eyes is a poor precursor to
24 collaboration.

25 "Collaboration is absent in an IMPLAN model that postulates millions in profit, but
26 only thousands for the local economy. The dollars are directed along a one-way path, out
27 of town.
28

1
2 "One finds it difficult to believe that your Indian River Project plans reflect what
3 Regional Forester Phil Janik proposed as collaborative stewardship.

4 "His is a laudatory goal. One which deserves a chance. These plans don't give it
5 one. But, with a lot of work, on all our parts, can be achieved.

6 "Sincerely, Robert A. Pegues."

7 [Applause of Audience]

8
9 **Jim Franzel:** Okay, thanks, Vicki.

10 I didn't have anyone else that signed up to testify. If there is someone that would
11 like to right now, ah...please let me know that. Otherwise, I'm going to close the testimony
12 for a short time, and then we'll have another opportunity before 9:00 if someone indicates
13 that they would like to testify.

14
15 **Donald Odenheimer:** I would like to continue my testimony. Is that okay?

16
17 **Jim Franzel:** Sure.

18
19 **Donald Odenheimer:** Okay. Donald Odenheimer, I think there's ah -- let's see,
20 I'll come on up here. Donald Odenheimer TKE 503 Box. Hello.

21 The thing that I don't think that we've touched on was ah -- subsistence. I think
22 there's a real likelihood that the ah -- United States Government, USDA, Forest Service,
23 whatever are going to take over stewardship for our subsistence. And I'm thinking, how
24 does this work into it? I look at your maps, and I'm thinking ah -- I don't think it really
25 takes into account where we're coming from here. I think there's a missing component
26 there. I think the US Forest Service should be looking at subsistence in our life and the
27 way we're doing it, and ah -- you have this big timber harvest and its, you, I heard it
28 projected, I think there's going to be less deer available for subsistence because of it.

1
2 Now, if you're going to be in charge of subsistence, how can you be get, cuttin' it
3 down, cuttin' it down by your own policies? You guys better take your jobs a little more
4 seriously, and you better, 'cause we're gonna be here. We're gonna subsist, and dog gone it,
5 help us out! Don't beat us up! Help us out! We're not gonna go away! We're gonna be
6 here, and I hope you're here with us.

7 Okay.

8
9 **Jim Franzel:** Okay. Thanks, Don. Is there anyone else at this time that would
10 like to testify? If not, I'm gonna close the hearing and, and as I said a few minutes ago, I'll
11 open it up again ah -- sometime before Nine.

12
13 **Unidentified Audience Member #5:** I'd like to say something real quick.

14
15 **Jim Franzel:** You bet. Please state your name, ah -- 'cause I didn't have you sign
16 in.

17
18 **Unidentified Audience Member #5:** I did sign in, actually.

19
20 **Jim Franzel:** Oh, you did?

21
22 **Unidentified Audience Member #5:** Yeah, I just didn't mark that I was going to
23 testify.

24
25
26 **Jim Franzel:** Okay.

1
2 **Zeb Strong:** um -- I'm Zeb Strong. um -- I'll make it quick.

3 Most, most of my concerns about the ah -- proposed harvest, or preferred
4 alternative, I guess is, relate to wildlife habitat. umm....

5 Like Dan Kennedy said, primarily in the Ten Mile area, I hunt there all the time.
6 Right now, [clears throat] well we just finished trapping Martin up there, its closed right
7 now because of the um -- Federal Subsistence, actually ADF&G regulations and Federal
8 Subsistence, both. umm....

9 One thing, one thing I thought should be mentioned that wasn't ah -- contained in
10 the DEIS, umm -- Last, last year 80% of the Martin on Northeast Chichigoff were
11 harvested. um -- I didn't see any mention of that in there. Actually, I, I mentioned this to
12 Linn Shipley, too.

13 I thought the um -- the numbers that were included there, the information he
14 acquired from Alaska Department of Fish and Game, is really way off the mark. And
15 whether that's attributable to, I don't know what, but, um...I, I thought that the 80% harvest
16 last year should be mentioned.

17 Also, um -- there was some faulty information about um -- restrictions on road
18 trapping, actually. Ah -- all of the native lands over in Hoonah are, the road system there
19 is open to road trapping, and its my understanding that's been going on the last couple of
20 years, and that's where most of that 80% was harvested out of, um -- this seems like a
21 pretty important point that should be included.

22 um -- As far as deer, it says there's a significant possibility of significant restriction
23 for subsistence uses, regardless of whether or not the, ah...there's any timber harvest in the
24 area. I'd like it to at least, ah, try to make an analysis of how significant these restrictions
25 would be. um -- Would they be more, more restrictive, with, with more timber taken out?
26 or -- Right now, right now all it, all it, all it says is that there will be some restriction. It
27 doesn't make any um -- comparative analysis of how, of how these restrictions might
28 change under different alternatives. That seems like a fairly important point.

1
2 um -- I concur with all the comments that were said about the M.O.U. dealings.

3 um -- I'm kind of concerned about the fact that there's no provision for local hire.

4 um -- I don't see that this is really going to create too many jobs for Tenakee, at the same
5 time it'll be creating a lot of wildlife habitat destruction here. um.....

6 Misleading numbers in your tourism, recreation/tourism income information on,
7 lets see, I think it was Table 427, projects like an 18% decrease in ah -- group days of use,
8 or whatever, which somehow, I don't know how only translates to a 2% reduction in
9 income generated. I don't know where that came from, but it just seems like it will be
10 hurting the local economy and local subsistence lifestyle, um -- at the same time, harvested
11 at a loss, again.

12 In light of all that information, I'd have to say that I prefer Alternative A,
13 realistically that probably won't happen. I'd like to at least have you get out of 10 Mile
14 area, save that habitat, 'cause that's pretty accessible still from the beach. And, get rid of
15 your LTF.

16 Like Odenheimer said, um -- I don't really want to see any new roads put in, or if
17 you do have to put 'em in, just a temporary road or something. I think there's enough road
18 back there already. um.....

19 That's about all I have to say. Thanks for hearing me.

20
21 **Jim Franzel:** Okay, thanks Zeb.

22
23 [Applause from audience.]

24
25 **Jim Franzel:** Is there anyone else that would, at this time, like to testify?

26
27 **Unidentified Audience Member #6:** Ah, yes. I'd like to.
28

1
2 **Jim Franzel:** Please state your name for the record.

3
4 **Bruce Ware:** My name is Bruce Ware.

5 And I just want to say that I, ah -- just want to agree with Elizabeth Shaw's
6 testimony that was read earlier tonight. Thank you.

7
8 **Jim Franzel:** Okay.

9 Anybody else that would like to testify? [pause] Okay, seeing none, I'll go ahead
10 and close the Hearing at this time, and then invite all of you to ah -- if you have any
11 questions about the ah -- Draft Environmental Impact Statement, ah -- we, the Forest
12 Service people that are here, would be happy to talk to ya. We will ask again before nine
13 o'clock for those that might want to testify or arrive between now and then.

14 I'd like to thank all of you for coming and giving us your comments tonight. And
15 with that I'll close the Hearing at this time.

16
17 [No further testimony for the record presented at this Hearing.

18 End of Recorded Hearing.]
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CERTIFICATION

STATE OF ALASKA)
) ss.
FIRST JUDICIAL DISTRICT)

I, Gail Johansen Peterson, Owner/Operator of Scribe Ink Services, hereby certify:

(1) That the foregoing pages numbered 1 through 33 contain a full, true and correct transcript of proceedings of the United States Forest Service Indian River Timber Sale(s) Project, ANILCA Section 810 Hearing and DEIS Public Comment Meeting, held January 13, 1998, in Tenakee Springs transcribed by me to the best of my knowledge and ability from Olympus microcassette tapes identified as follows:

Tape #1: USFS - Tenakee 1-13-98; Side A (7pm - 7:30pm)
& Side B (7:30pm - 8pm).

Tape #2: USFS - Tenakee 1-13-98; Side A (8pm - 8:20pm)
& Side B (blank).

(2) That I am not a relative or employee of any of the parties, nor financially interested in the action.

(3) That I have been authorized to provide this transcript by the USFS and qualified by the State of Alaska to provide court reporter services.

(4) Further, that the original hard copy of this transcript, and the original tape recordings of the Hearing have been sealed in an envelope and transmitted to the party requesting the transcription, according to law.

Dated at Sitka, Alaska this 29th day of January, 1998.

SIGNED AND CERTIFIED BY:

Gail Johansen Peterson
Gail Johansen Peterson,
Scribe Ink Services
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907-747-6949

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